M-AUDIO

Axiom 25-49-61

Advanced Semi-Weighted USB MIDI Controller

User Guide

ENGLISH

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Axiom 61

Introduction

Congratulations on the purchase of your M-Audio Axiom MIDI controller keyboard. Your new keyboard provides extensive control of virtual instruments, DAWs, hardware synthesizers, samplers and any other MIDI-compatible device.

The eight fully assignable pads give you the ability to trigger samples and loops separately from the keyboard in real-time. The eight fully assignable endless rotary encoders allow for instant control of your software's features and can pick up just where you left off. The versatile and easy-to-use Axiom keyboard is a great controller in the studio and live on stage.

What's in the Box?

If any of the following items are missing from your package, please contact your retailer.

- Axiom keyboard
- Quick Start Guide
- Keyboard Controller Series CD-ROM
- Software bundle CD-ROM
- USB cable

Axiom Keyboard Overview

Here is a rundown of some of the great features the Axiom keyboards have to offer:

- 25-, 49- or 61-note keyboard versions.
- Eight fully programmable endless rotary encoders.
- Eight fully programmable sample trigger pads.
- Nine fully assignable 40mm sliders (Axiom 49 and 61 only).
- USB 1.1 port to connect the Axiom to a computer. The keyboard can also be powered from the USB port, so no additional power supply is required.
- MIDI IN and MIDI OUT ports for connecting external MIDI gear.
- Expression pedal socket (expression pedal not included).
- Sustain pedal socket (sustain pedal not included).
- Fully programmable monophonic aftertouch.
- Null mode – for full parameter recall with each preset.
- Controller Mute – reposition controllers without affecting your software.
- Easy to program controls can be assigned to a vast range of MIDI messages including MIDI controller messages, GM/GS/XG SysEx messages, NRPN/RPN messages, channel aftertouch, program/bank changes, note messages and more.
- Rotary encoders can be programmed to use any of six popular increment/decrement methods for compatibility with virtually all software with encoder support. The encoders can also function as standard MIDI controllers with a range of 0 to 127.
- A range of different acceleration curves for the encoders for realistic dial control.
- Trigger pads respond to velocity or pressure and can be programmed to either send MIDI note data or controller messages, allowing for full control over all your software samplers, for triggering loops and much more.

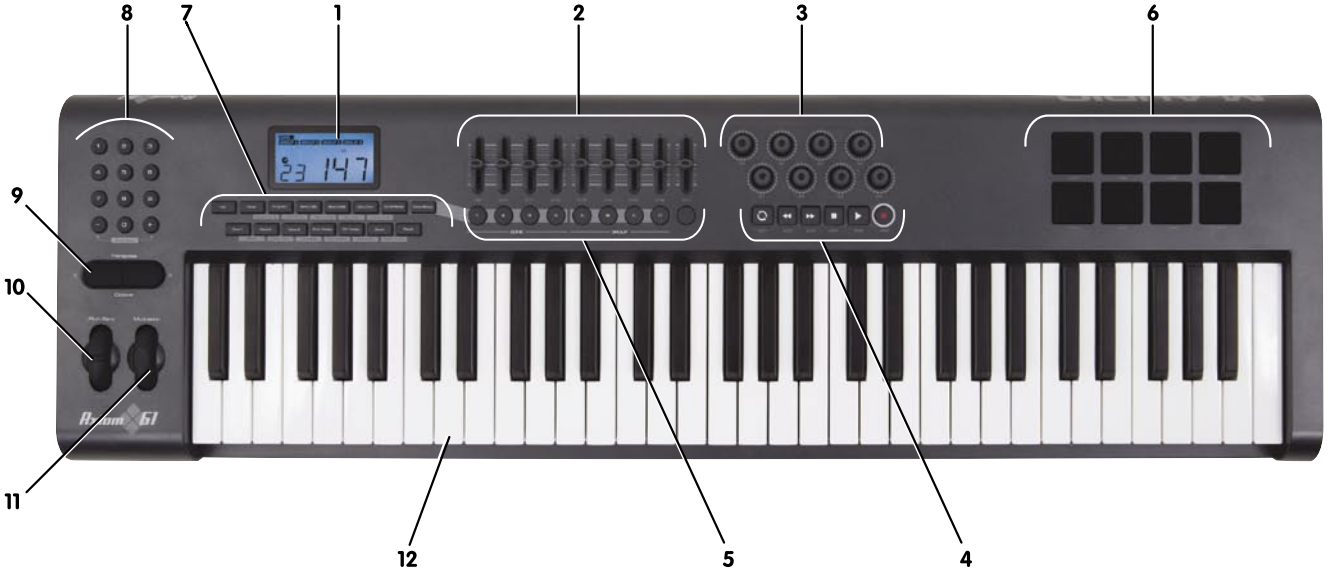
About This Manual

There are five sections to this manual. Section 1 provides an overview of your new Axiom keyboard and gives you details how to set up the keyboard with your computer. Section 2 explains some of your keyboard's basic control features to get you started right away. In section 3, we delve into more advanced functions and programming, and in section 4 we provide examples of your Axiom keyboard in use. Finally, section 5 explains more about MIDI and some often misunderstood MIDI message types.

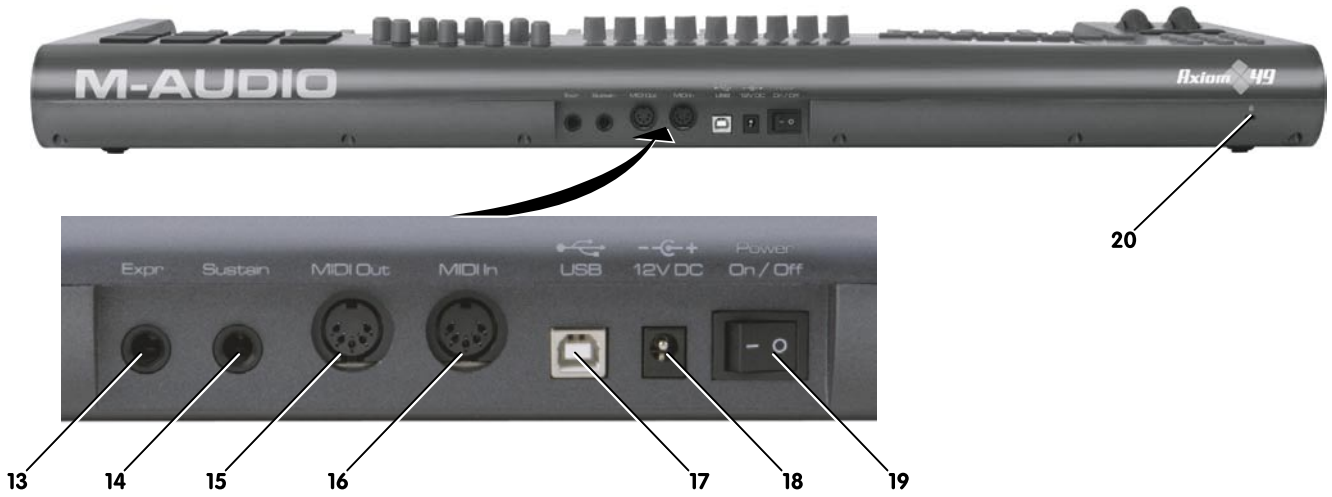
Section 1: Getting Started

1.1 Axiom Keyboards Overview

1.1.1 Top Panel Overview



1.1.2 Back Panel Overview



1.1.3 Control Definitions

These controls are referred by name throughout this manual.

1: LCD display

2: Sliders (Axiom 49/61 only)

3: Encoders

4: Transport buttons

5: Assignable buttons (Axiom 49/61 only)

6: Trigger Pads

7: Function buttons

8: Numeric Keypad (Axiom 49/61 only)

9: Octave buttons

10: Pitch Bend wheel

11: Modulation wheel

12: Keyboard with Aftertouch

13: Expression pedal socket

14: Sustain Pedal socket

15: MIDI OUT port

16: MIDI IN port

17: USB 1.1 port

18: DC power socket

19: Power switch

20: Kensington Lock Hole

1.2 Setup

If you intend to connect your Axiom keyboard to a computer, please read sections 1.2 and 1.3 first. If you only intend to use your Axiom keyboard to control a sound module or synthesizer using the external MIDI OUT you should skip to section 1.4.

1.2.1 Minimum System Requirements

If you are using your Axiom with a computer, the following minimum system requirements apply:

Windows	Mac OS
Pentium 3 800 MHz or higher	Macintosh G3* 800/G4* 733 MHz or higher
(CPU requirement may be higher for laptops)	(CPU requirement may be higher for laptops)
256 MB RAM	OS X 10.3.9 with 256 MB RAM,
DirectX 9.0b or higher	OS X 10.4.2 or greater with 512 MB RAM
Windows XP (SP2) or higher	*G3/G4 accelerator cards are not supported.
(Windows 98, Me, NT or 2000 not supported)	

M-Audio suggests you also check the minimum system requirements for your software, as they may be greater than the above.

USB hubs are not supported. M-Audio suggests that you connect directly to one of your computer's built in USB ports.

1.3 Driver Installation Procedure

***Important**: Do not connect the USB cable to a computer until you have read and understood the instructions in the Quick Start Guide. A printed copy of this is included in the box and you will also find this on the Keyboard Controller Series CD-ROM.*

1.3.3 Using The Axiom with Your Software

When installed, the Axiom appears as a simple MIDI device with two input ports and one output port. You should select the first listed Axiom input port as the MIDI input device in your software. Once this is set, your software should be able to receive notes and controller data from the Axiom.

If you have connected external MIDI gear like a drum machine or another keyboard to your Axiom's MIDI IN port, this gear can be interfaced to the computer by selecting the second listed Axiom input port. This way, your Axiom is acting as a MIDI to USB interface.

It is also possible to stream data from your computer to external MIDI gear connected to the MIDI OUT port of your Axiom—effectively a USB to MIDI interface. To do this, you should select the Axiom output device in your software. Note that some other steps are necessary to make this work that will be fully explained later in this manual.

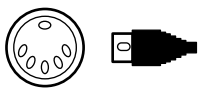
The port names are defined in the table below. Note that the MIDI ports will appear with different names depending on whether you are using Mac or PC, and whether you chose to install the Windows multi-client driver (more information on driver installation and configuration can be found at a later point in this manual):

	USB Input Port from Axiom	Input port from external MIDI IN	USB Output port to Axiom
Mac OS X	USB Axiom Port 1	USB Axiom Port 2	USB Axiom
Windows Class Driver	USB Audio Device*	USB Audio Device*	USB Audio Device*
Windows Multi-Client Driver	USB Axiom In	USB Axiom Out (2)	USB Axiom Out

* These will appear as a single USB Audio Device in the Device Manager.

1.4 MIDI Connections

The MIDI Out port accepts a standard 5-pin DIN-type MIDI plug (available from most professional audio retailers).



The MIDI Out port can be used to connect the Axiom to a hardware sequencer, an external synthesizer or sound module, for example.

1.5 Power Supply

If you are using your Axiom with a computer via its USB port, there is no need for an external power supply. Your Axiom will draw its power from the computer.

However, if you are intending to use your Axiom without connecting to a computer's USB port, then you will need to use an external power supply. No power supply is included in the box, so please select one that meets the following requirements:

- 12V DC
- 250mA – 300mA
- Center positive

Section 2: Basic MIDI Control From Your Axiom

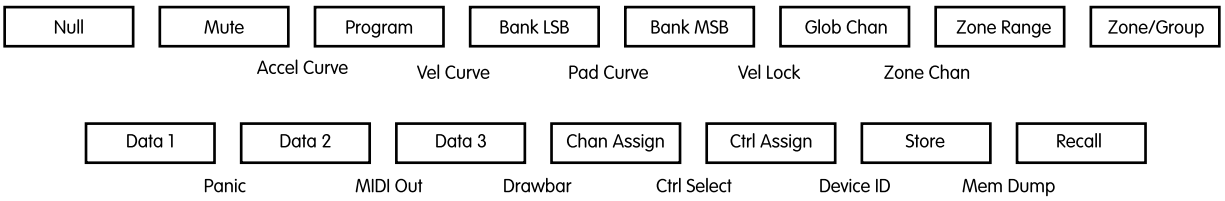
Your Axiom controller will not make any sound unless it is connected to a computer or other external MIDI gear. This is because the Axiom sends MIDI data when you play it and does not produce sound on its own. Instead, it is used to control a virtual instrument on your computer or a MIDI sound module to generate sounds.

Programming MIDI data can get complicated at times, so with the Axiom range of keyboards, we have strived to make MIDI programming as simple as possible. In this section we look at the most common MIDI messages and how to program them on your Axiom.

So to begin, you should familiarize yourself with the function button panel.

This is a good place to introduce you to the way we approach the differences between the Axiom 61 and 49 and the Axiom 25. The appearance and functionality of the Axiom 61 and 49 are the same, it's just the size of the keyboard that is different, thus when we give instructions for these models, they are always grouped together. The Axiom 25 looks different and a number of its functions are accessed in a different way, so for this model we will always give you a separate set of instructions.

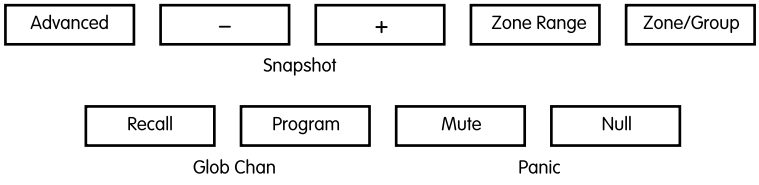
2.0.1 Axiom 49 And 61 Functions



Numeric Keypad

Use the numeric keypad to enter values during programming. The LCD display will show the values as you enter them.

2.0.2 Axiom 25 Functions



Advanced

A number of advanced functions on the Axiom 25 are accessed from the keyboard itself. These functions are listed above the keys on the front panel of the unit.

To use any one of these functions, first press the Advanced button. The button will light indicating that the keyboard is now in Advanced Function mode. The keys can now be used to select the functions shown above them, instead of sending MIDI notes.

Here is a list of the advanced functions that are available on your Axiom 25:

White Keys:	Black Keys:	Numeric Data Entry Keys
Ctrl Assign	Zone Chan	Numbers 0-9 and Enter.
Chan Assign	Ctrl Select	
Vel Lock	Data 1	
Bank LSB	Data 2	
Bank MSB	Data 3	
Mem Dump	Curve (Velocity curve, Pad curve, Rotary encoder acceleration curve)	
MIDI Out (from USB)		
Store		

Some of the functions on the Axiom 25 require you to enter numeric values. These functions are used in the following way:

- Press the Advanced button.
- Press the key of the function (for example, Bank LSB).
- Enter the data value using the Numeric Data Entry keys 0-9 on the keyboard (printed above the keyboard). In this example type in a value between 0 and 127.
- Press the Enter key to confirm the value.

Use the -/+ buttons to make small single step adjustments. As you enter data from the keyboard numeric keys or use the -/+ buttons, the current value is displayed on the LCD.

2.0.3 Function Index

Function	Section	Function	Section
Advanced (Axiom 25 only)	2.0.2	Mem. Dump	3.2.2
-/+	2.0.2	Dev. ID (Axiom 49, 61 only)	3.2.3
Snapshot	3.3.3	MIDI Out	4.1
Zone Range	3.6.4	Store	3.2.2
Zone/Group	3.6.2	Zone Chan.	3.6.3
Recall*	3.2	Ctrl Select	2.4.2
Program*	2.4.2 and 3.6.6	Data 1	3.1
Mute	3.3.1	Data 2	3.1
Null	3.3.2	Data 3	3.1
Glob. Chan*	2.2 & 3.6.7.3	Drawbar	3.1.2
Panic	2.4.3	Curve (Axiom 25 only)	2.1.1, 3.4.1 and 3.5.5
Ctrl Assign	2.4.2	Accel Curve (Axiom 49, 61 only)	3.4.1
Chan. Assign	3.6.7	Vel Curve (Axiom 49, 61 only)	2.1.1
Vel. Lock	3.5.6	Pad Curve (Axiom 49, 61 only)	3.5.5
Bank LSB	2.3 and 3.6.6	Numeric Keypad (Axiom 49, 61 only)	2.0.1
Bank MSB	2.3 and 3.6.6	Data Entry Keys (Axiom 25 only)	2.0.2

* The -/+ buttons will remember the last function used from these three: Recall, Program and Global Channel. After using one of these functions, the same function will be called the next time you press the – or + keys. When you press a different one of these function buttons, the -/+ keys will then remember this function as the last one used. To type in a value for one of these functions on the Axiom 25, press Advanced followed by the function button and then use the number keys on the keyboard followed by ENTER. On the Axiom 49 and Axiom 61, simply press the desired function button then enter a value using the numeric keypad.

2.1 The Keyboard

When you play the keyboard, MIDI note messages are sent. These messages are read by your computer software or external MIDI gear and used to generate sound accordingly.

2.1.1 Velocity Curve

Every time you press a key, a MIDI note message is sent with a velocity value between 0 and 127; this value specifies how hard you pressed the key. A velocity value of 0 specifies that the key has been released. Since different people have different playing styles, your Axiom offers a number of different velocity curves. You should experiment with the different velocity curves to find the curve that best suits your playing style.

It is also possible to send fixed velocities each time you press a key. This is useful when composing drum parts or simple synthesizer tracks. The fixed velocities are selected by assigning curve 10 to 12 as follows:

Curve	Fixed Velocity Value
F10	64
F11	100
F12	127

To change the velocity curve:

49- and 61-note versions:

- Locate the label Vel Curve. Press the two buttons above this label.
- The LCD will show the currently selected velocity curve, preceded by a 'C' if a curve is selected, or 'F' if a fixed velocity is selected.
- Enter the new curve number using the numeric keypad or use the -/+ keys to select a different curve.

25-note version:

- Press the Advanced button. This sets the keyboard to control data entry.
- Press the Curve key on the keyboard.
- The LCD will show the currently selected velocity curve preceded by a 'C' if a curve is selected, or 'F' if a fixed velocity is selected.
- Enter the new curve number using the numeric data entry keys or use the -/+ keys to select a different curve..
- Press the ENTER key to confirm the selected curve.

The velocity curve is saved whenever you power down your Axiom.

2.1.2 Octave

There are 128 possible notes that can be sent as MIDI messages. If you wish to play a note that is out of your keyboard's range, it is possible to shift the keyboard's range up or down using the Octave buttons. The Octave buttons shift the range of the keyboard up or down by 12 notes at a time. All of the 128 notes can be accessed via the Octave button.

To access all 11 available octaves from your keyboard:

- Locate the Octave buttons.
- Press < to shift down one octave at a time.

Or

- Press > to shift up one octave at a time.

2.1.3 Transpose

The Octave buttons can also be used to transpose your keyboard. Some players like to play in a particular key like C or F, for example. Transpose lets you change the pitch you are controlling and continue to play in the key that is most comfortable for you. It is possible to transpose up or down by as much as 12 MIDI notes (or semitones). This means if you press one of the transpose buttons 12 times, the tone will sound exactly one octave higher or lower.

To transpose the pitch you are playing:

- Locate the Octave / Transpose buttons and press them both together. The current transpose value will show on the LCD display.
- Press either > to transpose up by one half step, or < to transpose down by one half step. The transpose value on the LCD will update accordingly.
- When you stop pressing the Octave / Transpose buttons, the "Trans" symbol on the LCD display will stop flashing and performance mode will resume.

The maximum transpose value is +12 (up) or -12 (down) semitones.

Once you have set the transpose value, the Octave / Transpose buttons will again control the Octave shift.

Octave and Transpose settings can be saved to any of the 20 memory locations of your Axiom. This process is explained in section 3.2.

2.2 MIDI Channel

MIDI messages can be sent on any of 16 channels. If you are connected to a computer, the MIDI software will be receiving on all channels in most cases. However, when you are connected to external MIDI synthesizers, sound modules and some virtual instruments, you need to match the transmit channel of your keyboard with the receiving channel of the MIDI device for the connection to work properly.

To set the channel of your keyboard:

49- and 61-note versions:

- Press the Glob Chan button. The LCD will show the channel on which the keyboard is currently transmitting.
- Enter a channel between 1-16 on the numeric keypad. The LCD will update to display the new channel selected as you enter the data.
- You can also use the -/+ buttons to step through the channels.

25-note version:

- Press Recall and Program together to access the Glob Chan setting. The LCD will flash the GLOB CHAN symbol.
- Use the -/+ buttons to select a channel between 1-16. As you press these buttons, you will see the selected channel change on the LCD display.

Or

- Press the Advanced button.
- Press Recall and Program together to access the Glob. Chan setting.
- Enter a channel between 1-16 on the numeric data entry keys.
- Press the Enter key to confirm the entered value.

Controlling Percussion Sounds – Setting the transmit channel of your keyboard to channel 10 will allow you to control percussion sounds on any GM, GM2, GS or XG compatible module or synthesizer.

The Global MIDI channel setting can be saved to any of the 20 memory locations of your Axiom. This process is explained in detail in section 3.2.

***Note**: It is possible to assign the controls of your Axiom to channels on an individual basis. This is explained in section 3.6.7.*

2.3 Program and Bank Changes

Program messages (commonly referred to as program changes) are used to select different instrument sounds in a MIDI device. Program messages cover a range of 128 instruments. These instruments are accessed by sending program numbers 0 to 127.

Some MIDI devices have more than 128 instruments. If this is the case, the instruments tend to be separated into groups of 128, called banks. You can send bank MSB and bank LSB messages to access these different banks. Please consult the user manual of your MIDI device to see how the bank change numbers relate to the sounds on your device.

To send a program change:

49- and 61-note versions:

- Press the Program button.
- The LCD will flash the program number that was last sent out.
- Enter the program change in the range 0-127 on the numeric keypad.
- You can also use the -/+ buttons to step through programs.

25-note version:

- Press the Program button.
- The LCD will flash the PROG symbol.
- Use the -/+ buttons to select a program change in the range 0-127.

Or

- Press the Advanced button.
- Press the Program button.
- Enter the program change in the range of 0-127 on the numeric data entry keys.
- Press the Enter key to confirm the entered value

To send a bank change:

49- and 61-note versions:

- Press the Bank LSB or Bank MSB button.
- The LCD will flash the bank number that was last sent out.
- Enter the new bank number in the range of 0-127 on the numeric keypad.

25-note version:

- Press the Advanced button.
- Press either the Bank LSB key or Bank MSB key.
- The LCD will flash the bank number that was last sent out.
- Enter the new bank number in the range 0-127 on the numeric data entry keys.
- Press the Enter key to confirm the entered value.

Program and bank settings can be saved to any of the 20 memory locations on your Axiom. This process is explained in detail in section 3.2.

2.4 MIDI Controller Messages

There are 128 MIDI controller messages that are used for controlling the MIDI-adjustable parameters in your software or on your external MIDI gear. Examples of these controllable parameters include volume, pan, expression, reverb, chorus and portamento.

Each of the controls on your Axiom keyboard is able to send any of the 128 standard MIDI controller messages to control such parameters. Please note that in order for these effects to work, the MIDI device you are sending to must be able to receive these messages. A full list of these control messages is given in Appendix C.

For example, you may want to set the Modulation wheel to control the reverb amount. This is done by assigning controller 91 to the Modulation wheel (control A10 on Axiom 25, control A19 on Axiom 49 and Axiom 61). .

Examples of other popular effects are listed in the table below. (Please consult Appendix C for the full list.)

Effect	Control Number
Modulation	1
Volume	7
Pan	10
Expression	11
Reverb depth	91
Chorus depth	93

There are many different types of virtual instruments available and most of these respond to MIDI controller messages, allowing you to control a variety of parameters from your Axiom keyboard. Please review the manual that came with your software or external gear to see what these controller numbers are.

2.4.1 Extra Messages – 128 To 131

You may have noticed that although we have stated there are 128 MIDI controller messages (0 – 127), Appendix C shows 132 assignable controller messages. This is because messages 128 – 131 are a different type of MIDI message, defined in the General MIDI Specification as RPN messages. You can assign these to the controls on your Axiom keyboard in exactly the same way as any other MIDI controller message. The RPN messages control the following:

Controller Number	MIDI Message	Use
128	Pitch Bend Sensitivity	Alters the range of a pitch bend message
129	Master Tune (coarse)	Adjusts the tuning of your sound module or synthesizer in large steps
130	Master Tune (fine)	Adjusts the tuning of your sound module or synthesizer in small steps
131	Monophonic Aftertouch*	Adds a vibrato effect

*Monophonic aftertouch is not an RPN message. However, it is an additional effect message defined in the General MIDI specification and this is why we have included it in Appendix C.

2.4.2 Programming the Controls on Your Axiom

When programming a physical controller on your Axiom, the controller that was last used will be the first one selected for programming. To select a different physical controller for programming, use one of the following two methods:

Method 1:

25-, 49- and 61-note versions:

- Move the physical controller you wish to program, or press the assignable button or pad.

Method 2:

49- and 61-note versions:

- Press Chan Assign and Ctrl Assign together to access the Ctrl Select setting.
- The LCD display will flash the last used control.
- Use the numeric keypad to enter the number of the physical controller you want to select for programming.

25-note version:

- Press the Advanced button.
- Press the Ctrl Select key on the keyboard.
- The LCD display will show the last used control.
- Use the numeric data entry keys to enter the number of the physical controller you want to select for programming.
- Press the Enter key to confirm and return to performance mode.

The advantage of method 2 is that you do not have to move a control to select it – so there is no danger of disturbing a parameter on the MIDI device you are controlling.

Programming a control:

49- and 61-note versions:

- Select the physical controller for programming using method 1 or 2 above.
- Press the Ctrl Assign button.
- The LCD display will show the currently assigned MIDI controller number The physical controller you are programming is displayed in the bottom left hand corner of the LCD display for clarity.
- Use the numeric keypad or the -/+ buttons to enter the MIDI controller number 0-131 as defined in Appendix C.

25-note version:

- Select the physical controller for programming using method 1 or 2 above.
- Press the Advanced button.
- Press the Ctrl Assign key on the keyboard.
- The LCD display will show the currently assigned MIDI controller number The physical controller you are programming is displayed in the bottom left hand corner of the LCD display for clarity.
- Use the numeric data entry keys or the -/+ buttons to enter the MIDI controller 0-131 as defined in Appendix C.
- Press the Enter key to confirm and return to performance mode.

The settings for your controllers can be saved to any of the 20 memory locations on your Axiom. This process is explained in detail in section 3.2.

***Note**: By default, the LCD display shows transmitted real time controller values between 0 and 127 as a physical control like an encoder or fader is being moved. Alternatively, the LCD can be configured to only show the assigned controller number of the currently used physical controller (e.g. controller number 7 for Volume). The LCD display mode can be changed as follows:*

- Press the Zone Range and Zone/Group buttons together.
- The LCD will display OFF.
- Simultaneously press the Zone Range and Zone/Group buttons again to change the LCD back to its default mode. The LCD will display ON.

2.4.3 Panic

At times you may find that the sound on your sound module or virtual instrument does not seem correct, or that notes get "stuck" and sound continuously. When this happens, press the button combination for Panic which will send 'reset all controllers' and 'all notes off' commands. This will release stuck notes and reset controller values back to normal. The messages are sent on all 16 MIDI channels. The LCD will show "Panic" while these messages are transmitted.

49- and 61-note versions:

- Press Data 1 and Data 2 together.

25-note version:

- Press Mute and Null together.

2.4.4 Reset

It is possible to completely reset your keyboard at any time. To do this, turn the Axiom off and then press and hold down both of the -/+ buttons as you power up the keyboard.

Important Note: When you perform this reset, all of the factory presets are lost. To restore the factory presets, please use the Enigma software, available as a free download at www.m-audio.com.

Section 3: Advanced Features

In section 2 we saw how to use the keyboard, send program and bank changes, and assign MIDI controllers to the various controls on your Axiom. These basic skills allow you to perform with many software applications, sound modules and synthesizers. However, the Axiom has some more advanced features that allow you to take your performances even further. In this section we look at these features and how you can make use of them.

(If you have not done so already, please familiarize yourself with the various functions used when programming your Axiom. Details of these functions are given in section 2)

3.1 MIDI Controllers

Appendix C lists all the standard MIDI controller messages and some additional common messages all of which can be assigned to the controls on your Axiom.

Here we introduce an expanded list of MIDI controllers and also different ways that the controls on the Axiom are able to function. Since these extra controller numbers are specific to different types of controls on the Axiom, please consult the appendices:

Axiom Control	Controller Definition Table
Sliders (Axiom 49/61 only)	Appendix D
Aftertouch strip	Appendix D
Expression pedal	Appendix D
Pitch Bend wheel	Appendix D
Modulation wheel	Appendix D
Sustain pedal	Appendix E
Transport buttons	Appendix E
Assignable buttons (Axiom 49/61 only)	Appendix E
Rotary encoders	Appendix F
Pressure Pads	Appendix G

Each MIDI controller has either two or three extra data parameters associated with it, as shown in the appendices listed above. The function of these extra data parameters depends on what MIDI controller number is assigned to the selected Axiom control. The appendices above show the details of what this functionality may be. The extra data parameters for a controller are accessed using the Data 1, Data 2 and Data 3 buttons on the 49- and 61-note versions, and the Advanced button, followed by the Data 1, Data 2 or Data 3 keys on the 25-note version.

The useful programming examples given below describe some of the uses for these extra data parameters.

3.1.1 Limiting the Range of Controllers

It is possible to limit the range of the sliders, aftertouch strip, expression pedal or encoders on your Axiom. This is achieved using the extra data parameters for the controller as follows:

49- and 61-note versions:

- Set the physical controller to transmit a MIDI controller message as described in section 2.4.2.
- Press Data 2 and enter the minimum value for the controller's range.
- Press Data 3 and enter the maximum value for the controller's range.

25-note version:

- Set the physical controller to transmit a MIDI controller message as described in section 2.4.2.
- Press the Advanced button.
- Press the Data 2 key and enter the minimum value for the controller's range.
- Press Enter to confirm the change for the minimum value.
- Press the Advanced button.
- Press the Data 3 key and enter the maximum value for the controller's range.
- Press Enter to confirm the change for the maximum value.

3.1.2 Drawbar Mode

Drawbar mode is a quick method of reversing the direction of the nine sliders on your Axiom 49 or 61. If you are controlling an instrument that makes use of drawbars rather than faders—the MB-3 electric organ on Key Rig for example—then you should use drawbar mode.

The Drawbar function is not available on the 25-note version.

Press Data 3 and Chan Assign together to enable Drawbar mode. When Drawbar mode is active, this will be indicated by the Drawbar symbol in the LCD display.

The status of Drawbar mode can be saved in any of the 20 memory locations. It will also be saved when you power down your Axiom.

***NOTE**: It is possible to reverse the direction of any control on your Axiom 25, 49 or 61, by switching the minimum and maximum limits for the controller (for example: min=127 and max=0; refer to the previous section for details on how to do this).*

3.1.3 Turning Controls OFF

Stop a control from transmitting MIDI data by turning that control OFF. This is done as follows:

49- and 61-note versions:

- Select the controller as described in section 2.4.2.
- Press the Ctrl Assign button and enter "000" on the numeric keypad.
- While the LCD is still flashing, press the data minus (–) button.
- The LCD will now display OFF.

25-note version:

- Select the controller using the method described in section 2.4.2.
- Press the Advanced button.
- Press the Ctrl Assign key, and enter '000' using the numeric data entry keys.
- Press Enter to confirm.
- Press the Advanced button, followed by the Ctrl Assign key again.
- Press the data minus (-) button
- The LCD will now display OFF.
- Press Enter to confirm.

3.2 Recollection and Storage of Your Control Setups

Once you have programmed the controls of your Axiom, you can store your setup into one of the 20 memory locations the Axiom offers.

The 20 locations are accessed using the Store and Recall buttons. Use the Store button to write your control setups to a memory location. Use the Recall button to get your control setups back.

To store all of the current control settings on your Axiom:

49- and 61-note versions:

- Press the Store button.
- Enter the number of the memory location (1 to 20) using the numeric keypad.

25-note version:

- Press the Advanced button.
- Press the Store key.
- Enter the number of the memory location (1 to 20) using the numeric data entry keys, or the -/+ buttons.
- Press the Enter key to confirm and overwrite this preset location.

To recall any memory you have stored:

49- and 61-note versions:

- Press the Recall button.
- Enter the number of the memory location (1 to 20) using the numeric keypad.

25-note version:

- Press the Advanced button.
- Press the Recall button.
- Enter the number of the memory location (1 to 20) using the numeric data entry keys.
- Press the Enter key to confirm.

or

- Press the Recall button.
- Use the -/+ buttons to increment, decrement the currently selected memory.

3.2.1 Control Groups

The controls on your Axiom are separated into four groups (three on the 25-note version), labeled A, B, C and D (or A, B and C on the 25-note version). It is possible to recall or store each group individually. The controls are grouped as follows:

Group A:	**Group B:**	**Group C:**	**Group D** (49 note and 61 note versions only):
Keyboard	Eight encoders	Eight trigger pads	Nine sliders
Pitch Bend wheel	Six transport controls		Nine assignable buttons
Modulation wheel			Drawbar mode setting
Expression pedal			
Aftertouch strip			
Sustain pedal			
Zone settings*			
Global Channel setting			
MIDI Out from USB setting			
Program, Bank LSB, MSB settings			

* For more details on Zone settings, please see section 3.6.

The active groups during store and recall of memories are indicated on the LCD display. The Zone/Group button is used to select which groups are active. If Zone/Group is active, the LED will light inside the Zone/Group button.

On the 49- and 61-note versions, when Zone/Group is active, the group buttons A, B, C and D (located below faders D13 through D16) are used to activate/deactivate Groups A-D, as the LCD screen shows.

On the 25-note version, when Zone/Group is active, the STOP, PLAY and REC buttons are used to activate/deactivate Groups A-C, as the LCD display shows.

You can switch Zones and Groups on and off by pressing the Zone/Group button followed by the chosen Zone or Group buttons. When you enable a single group, the other two (or three) groups are automatically disabled. To enable multiple groups, press the respective group buttons at the same time.

Whenever you engage the Recall or Store functions, you will notice that Zone/Group select becomes active automatically.

If you press the Store button, all groups will be active by default to prevent any risk of some of the controllers you have set up getting missed. However, if you do not wish to store all controller groups together, you can activate the desired combination of controller groups by simultaneously pressing their respective group buttons immediately after pressing Store.

For example, if you want to store the settings for the trigger pads only:

49- and 61-note versions:

- Press the Store button.
- Press group button C to activate group C only.
- The LCD display will now only flash the Group C symbol.
- Use the numeric keypad to enter the memory location to store the Pad settings.

25-note version:

- Press Advanced.
- Press the Store key.
- Press the REC button to activate group C.
- The LCD display will now only flash the Group C symbol.
- Use the numeric data entry keys to enter the memory location.
- Press Enter to overwrite the selected memory location.

***Note**: When recalling a preset, only the groups currently active at that time are recalled.*

3.2.2 Storing Your Presets on a Computer

It is possible to store the entire memory contents of your Axiom on a Mac, PC or a hardware sequencer. This is done using the Memory Dump feature which sends a MIDI SysEx dump to the connected device.

You can record the SysEx data to a MIDI track on a sequencer, or we recommend using M-Audio's Enigma software to store and manage you Axiom controller presets.

To send the entire memory contents of your Axiom to a computer:

49- and 61-note versions:

- Press Store and Recall together to initiate the Memory Dump feature.
- The LCD display will flash SYS while the Axiom is transmitting its Memory content.
- Do not touch your Axiom until the SysEx dump has completed and the LCD display has returned to normal.

25-note version:

- Press the Advanced button.
- Press the Mem Dump key.
- The LCD display will flash SYS while the Axiom is transmitting its Memory content.
- Do not touch your Axiom until the SysEx dump has completed and the LCD display has returned to normal.

By sending an externally stored SysEx dump back through the MIDI IN or the USB port on your Axiom, it is possible to reprogram the memory just as it was saved.

***Note**: The SysEx data will program the 20 memory locations on your Axiom. It does NOT affect the current control settings on your Axiom. All current settings and assignments remain unchanged until you recall one of the 20 memory locations.*

3.2.3 Device ID

On the 49- and 61-note versions, you can define the device ID of your specific Axiom keyboard when sending a SysEx memory dump. The device ID is used to distinguish between any number of connected Axiom keyboards, if you own more than one.

The 25-note version does not have a device ID feature and so the device ID remains hard coded at 127. (127 is also the default device ID for the 49- and 61-note versions.) With the device ID set to 127, your Axiom responds to any SysEx memory dump that it reads at the MIDI IN or USB port – even if the received memory dump specifies a different device ID.

If you change the device ID to any number other than 127, the device will only respond to SysEx memory dumps which were originally recorded on the same device ID number.

To change the default device ID on Axiom 49 or 61, simultaneously press the Ctrl Assign and Store buttons, then enter the desired device ID using the numeric keypad or the -/+ buttons.

3.3 How To Avoid Jumping Parameters

A common problem with MIDI controllers occurs when you move a physical controller and the receiving parameter on your external MIDI gear or software jumps from its present setting to the position of the knob or fader that you are using. The result can be a volume spike, a vibrato effect suddenly engaging or a pan position jumping from one side to another. The Axiom is well equipped to avoid this situation.

3.3.1 Mute

The Mute button on your Axiom will turn off the MIDI data output from all controls. This allows you to re-position the knob or faders that you are using to a setting that matches the current value of the parameter you are addressing.

When the controls are all muted, the LCD displays the MUTE symbol. The controls are un-muted by pressing the Mute button a second time.

Note that Mute does not affect the assignable buttons, sustain pedal or the keyboard. This is because these controls send one-shot MIDI controllers, so there is never a need to match them to the parameter they are controlling. So, Mute mode is disengaged when you play the keyboard, or if you press an assignable button or the sustain pedal.

3.3.2 Null

The Null button engages Null mode which is used to temporarily deactivate the controls on your Axiom when you call up a new memory location. Null mode blocks the controls from outputting MIDI data until they reach the same position at which you left them the last time you used the memory location. When Null mode is active, there is never a worry that a control on your Axiom will cause a parameter to jump.

Turn Null mode on and off at any time simply by pressing the Null button. When Null mode is active, the LED in the Null button will be lit.

When you recall a preset, if Null mode is active moving a control on the Axiom engages a comparison between the current position of the control and its position when you last used this preset. If the control is at a different position than where you last left it before changing presets, the NULL symbol on the LCD display is shown and the numerical value displayed indicates how far away you are from the original position. A negative number indicates that the current value is lower than where you had left it, and a positive number indicates a higher value. As you move the control nearer to its original value, you see the numbers on the LCD display tend towards 0. When 0 is reached, the NULL symbol turns off, and the control starts to output MIDI data again.

The current positions of every control are remembered each time you leave a memory to recall a new one, regardless of whether Null mode is active or not.

The status of Null mode is stored on powering down your Axiom.

3.3.3 Snapshot

The Snapshot function sends out the current values of the sliders, Expression pedal, Modulation wheel, Pitch Bend wheel and rotary encoders. This will adjust your software or external MIDI gear to the control positions on your Axiom.

Press the - and + buttons together to use the Snapshot function.

Snapshot can be used in conjunction with the Mute function (section 3.3.1) in order to perform a function not available on most hardware synths. Use the Mute function to reposition the controls of your Axiom as you like, and then use the Snapshot function to send all of the new positions at the same time.

3.4 The Rotary Encoders

As mentioned in section 2 it is possible to assign the rotary encoders to any MIDI controller message listed in Appendix C. When the encoders are assigned to MIDI controllers, they work in the same way as the sliders on the Axiom 49 and 61—when the minimum or maximum limit is reached, no more data is sent until you turn the dial the other way.

It is possible to program the encoders to increment or decrement the current value in the software, rather than sending an actual value. This means that there is never a risk of causing your software parameters to jump if they do not match the position of the control you're moving.

Please note that not all software supports the use of rotary encoders. Also, those applications that do support them can differ in the way that encoder support is implemented. The Axiom therefore supports several different types of increment/decrement MIDI messages. You should check your software's manual to see what message type is supported and how to engage endless dial support. To help with this we have listed the names commonly used for each of the relative data methods. We have also provided the data values used to represent data increment and data decrement. Where a range of values is specified for an increment or decrement, the range is in the form "slow movement" to "fast movement".

The Program change increment/decrement will send out program changes with each step.

In order to program one of these methods to the rotary encoders on your Axiom, you should assign the MIDI controllers given below:

MIDI CC	Endless Data Method	Increment	Decrement
145	Program Change Increment/Decrement	—	—
146	2's Compliment from 64 / Relative (Binary Offset)	065 to 127	063 to 000
147	2's Compliment from 0 / Relative (2's Compliment)	001 to 64	127 to 065
148	Sign Magnitude / Relative (Signed Bit)	065 to 127	001 to 063
149	Sign Magnitude / Relative (Signed Bit 2)	001 to 063	065 to 127
150	Single Value Increment/Decrement	096	097
151	RPN Increment/Decrement Message	096 then 000 to 127	097 then 000 to 127
152	NRPN Increment/Decrement Message	096 then 000 to 127	097 then 000 to 127

To Assign the Rotary Encoders:

49- and 61-note versions:

- Select the rotary encoder as explained in section 2.
- Press the Ctrl Assign button. The LCD shows the encoder's current controller assignment.
- Decide which endless data method you want from the table above, and enter its MIDI CC number using the numeric keypad.
- Press Data 2. The LCD display flashes the encoder's current data parameter.
- Enter the MIDI controller number from Appendix C that you want. (Note that the range in this case is 0-127, not 0-131.)
- The encoder will now transmit increment/decrement messages on the MIDI controller you have set.

25-note version:

- Select the rotary encoder as explained in section 2.
- Press the Advanced button.
- Press the Ctrl Assign key. The LCD will show the encoder's current controller assignment.
- Decide which endless data method you require from the table above, and enter its MIDI CC number using the numeric data entry keys.
- Press the Enter key to confirm.
- Press the Advanced button again.
- Press the Data 2 key. The LCD display will show the encoder's current data parameter..
- Enter the MIDI controller number from Appendix C that you want. (Note that the range in this case is 0-127, not 0-131.)
- Press the Enter key to confirm.
- The encoder will now transmit increment/decrement messages on the MIDI controller you have set.

3.4.1 Acceleration Curves

There are three acceleration curves (C1-3) which define the relationship between how fast you turn the endless encoder and the value increment/decrement that is sent out. It is also possible to turn the acceleration curve OFF so that regardless of how quickly or slowly you turn the dial, the value will only increment/decrement by 1 per step. Turning the acceleration curve off is useful if you are performing adjustments that require fine tuning.

To turn the acceleration curve off, set the curve to 0. Curve settings 1-3 get progressively more sensitive to movements of the dial. So, if you are going to be performing a lot of large, fast controller sweeps, you should select acceleration curve 3.

The curve selected by default is 2 which we advise for general use, in performing both large and small sweeps.

To select the acceleration curve:

49- and 61-note versions:

- Press Mute and Program together to access the Accel Curve setting.
- The LCD display will show the currently assigned acceleration curve.
- Use the numeric keypad or the -/+ buttons to select an acceleration curve in the range 0 to 3. The 0 setting will turn the curve off.

25-note version:

- Press the Advanced button.
- Press the Curve key 3 times.
- The LCD display will show "En" on the small 2-digit display to indicate that you have selected to edit the endless dial's acceleration curve. The currently assigned acceleration curve will show on the larger, 3-digit display
- Use the numeric data entry keys, or the -/+ buttons to select an acceleration curve in the range 0 to 3. The 0 setting will turn the curve off.
- Press the Enter key to confirm.

3.5 Pressure Pads

The eight pressure pads on your Axiom are unique controls. As you apply more pressure to a pad, a higher value of effect is transmitted. The pads can also be used as triggers for composing drum patterns, or triggering samples and loops. When in this mode, the harder you hit a pad the higher the transmitted value of effect.

You can program the pads to any of the controllers listed in Appendix G.

If you program a controller number from 0 to 144, the pad sends a value according to the pressure you apply.

If you program a controller number from 145 up to 156, the pad works as a trigger, sending a single value when you press the pad, and another value when you release it.

Some useful settings for these pads are:

3.5.1 Sample/Loop Triggers With MIDI Notes

Setting a pad to controller 147 sets the pad to send a MIDI Note On message when you press it, and a MIDI Note Off message when you release it. This is useful when triggering samples on your external MIDI gear or software. When you program a pad to controller 148, the MIDI Note Off message is not sent until you press the pad a second time (toggle effect). This can be useful if you want to keep a loop playing continuously.

To program the pads to send a MIDI note on/off message:

49- and 61-note versions:

- Select the pad as described in section 2.
- Press the Ctrl Assign button.
- The LCD display will show the controller number currently assigned to the pad.
- Enter 147 for Note on/off (press/release), or 148 for Note on/off toggle
- Press the Data 1 button.
- The LCD display will show the currently assigned note for the pad.
- Enter the note number you want the pad to transmit using the numeric keypad.
- The Data 2 and Data 3 buttons can be used to specify the note off velocity, and note on velocity respectively.

25-note version:

- Select the pad as described in section 2.
- Press the Advanced button.
- Press the Ctrl Assign key.
- The LCD display will flash the currently assigned controller for the pad.
- Enter 147 for Note on/off (press/release), or 148 for note on/off toggle
- Press the Enter key to confirm.
- Press the Advanced button again.
- Press the Data 1 key.
- The LCD display will flash the currently assigned note for the pad.
- Enter the note number you want the pad to transmit using the numeric keypad.
- Press the Enter key to confirm.
- Press the Advanced button again.
- The Data 2 and Data 3 keys can be used to specify the note off velocity, and note on velocity respectively.

3.5.2 Drum Pattern Composition

When you first turn your Axiom on, you will find that the pressure pads are set up as drum triggers for composing drum patterns in MIDI sequencers.

To set up the drum triggers, you need to program the pads to send specific MIDI note numbers (see previous section). The note numbers you assign depend on the drums that you want to control. Please refer to Appendix B to see which drums are mapped to which MIDI note numbers. Then, using the Data 1 parameter for each pad on your Axiom, assign that note number to the pad, as described above.

3.5.3 Sample/Loop Triggers with MIDI Controller Messages

In some cases,you may wish to send standard MIDI controller messages to trigger samples or loops. To make this work, you need to first assign a MIDI controller to the pad and then set the pad to send just ON and OFF values. This is done as follows:

49- and 61-note versions:

- Select the pad as described in section 2.
- Press the Ctrl Assign button.
- The LCD display will flash the currently assigned controller for the pad.
- Enter 146, which sets the pad to send an ON value when pressed, and OFF value when released.
- Press the Data 1 button and enter the controller number from Appendix C that you want the pad to send. The range of values here is 0-127.
- Press the Data 3 button and enter the ON value (this should be 127 in most cases).
- Press the Data 2 button and enter the OFF value (this should be 0 in most cases).

25-note version:

- Select the pad as described in section 2.
- Press the Advanced button.
- Press the Ctrl Assign key.
- The LCD display will flash the currently assigned controller for the pad.
- Enter 146 to set the pad to send an ON value when pressed, and OFF value when released.
- Press the Enter key to confirm.
- Press the Advanced button again.
- Press the Data 1 button and enter the controller number from Appendix C that you want the pad to send. The range of values here is 0-127.
- Press the Enter key to confirm.

- The LCD display will flash the currently assigned note for the pad.
- Enter the note number you want the pad to transmit using the numeric keypad.
- Press the Enter key to confirm.
- Press the Advanced button again.
- The Data 2 and Data 3 keys can be used in the same fashion to specify the ON value (this should be 127 in most cases) and the OFF value (this should be 0 in most cases).

3.5.4 Pressure Control

Using the pressure control, the pads give you a different type of performance option on your Axiom. You can control parameters on your software in a way that would not be possible on a standard dial or slider. The pressure pads can be used to make some very interesting effects.

As we've seen above, each pad can be assigned an individual MIDI controller number. It is also possible to assign minimum and maximum values to the controller. As you apply more and more pressure to the pad, the value of the controller you are sending will increase, until the maximum value you specified is reached. On release, the pad will return to the minimum value you specified.

To set the controller for a pressure pad with a minimum and maximum value:

49- and 61-note versions:

- Select the pad as described in section 2.
- Press the Ctrl Assign button.
- The LCD display will show the currently assigned controller for the pad.
- Enter the controller number from Appendix C that you want the pad to send.
- If you want to specify a minimum value limit, press the Data 2 button and enter the minimum value.
- If you want to specify a maximum value limit, press the Data 3 button and enter the maximum value.

25-note version:

- Select the pad as described in section 2.
- Press the Advanced button.
- Press the Ctrl Assign key.
- The LCD display will show the currently assigned controller for the pad
- Enter the controller number from Appendix C that you want the pad to send, using the numeric data entry keys. Press the Enter key to confirm.
- If you want to specify a minimum value limit, press the Advanced button, followed by the Data 2 key and enter the minimum value. Press the Enter key to confirm.
- If you want to specify a maximum value limit, press the Advanced button, followed by the Data 3 key and enter the maximum value. Press the Enter key to confirm.

3.5.5 Pad Curve

The Pad Curve setting is used to set the response curve of all eight pads. It is not possible to set the response curve of the pads independently.

There are nine velocity response curves and three fixed curves.

To change the velocity curve for the pads:

49- and 61-note versions:

- Press the Bank LSB and Bank MSB buttons together to access the Pad Curve setting.
- The LCD will show the currently selected pad curve. Proceeded by a 'C' if a curve is selected, or 'F' if a fixed velocity* is selected.
- Enter the new curve number using the numeric keypad or use the -/+ keys to step through the options.

25-note version:

- Press the Advanced button.
- Press the Curve key twice.
- The LCD will show "Pd" on the small 2-digit display as well as the currently selected velocity curve on the 3-digit display. The current curve is preceded by a C if a curve is selected, or 'F' if a fixed velocity* is selected.
- Enter the new curve number using the numeric data entry keys or use the -/+ keys to step through the options.
- Press the Enter key to confirm the Pad Curve setting.

*It is also possible to send fixed velocities each time you press a pad This is useful when composing drum parts, or simple synthesizer tracks. The fixed velocities are selected by assigning Pad Curve 10 to 12 as follows:

Curve	Fixed Velocity Value
10	64
11	100
12	127

3.5.6 Velocity Lock

The Velocity Lock (Vel. Lock) feature allows you to immediately turn off the response curve of the pads, and lock them to a set velocity. You can assign a different Lock velocity to each pad individually.

To turn Vel. Lock mode on and off for Axiom 49 or 61, press the Bank LSB and Glob Chan buttons together.

On the 25-note version, first press the Advanced button and then the Vel Lock key. The display will show "Loc" if you turn Vel Lock on.

Please note that the Vel. Lock feature only applies to pads set up as trigger pads. If a pad is assigned as a pressure pad, the Vel. Lock function has no affect.

The velocities that are locked by this function are set using the Data 2 and Data 3 parameters for each pad.

Setting the Vel. Lock parameters as follows:

49- and 61-note versions:

- Select the pad for programming as explained in section 2.4.2.
- Ensure the pad is set up as a note trigger pad as described in section 3.5.1.
- Press the Data 3 button. Enter the fixed ON velocity.
- Press the Data 2 button. Enter the fixed OFF velocity.

25-note version:

- Select the pad for programming as explained in section 2.4.2.
- Ensure the pad is set up as a note trigger pad as described in section 3.5.1.
- Press the Advanced button.
- Press the Data 3 key. Enter the fixed ON velocity.
- Press the Enter key to confirm.
- Press Data 2 key. Enter the fixed OFF velocity.
- Press the Enter key to confirm.

3.6 Controlling Several Devices at the Same Time

In a software MIDI environment, it is often desirable to control more than one device at a time. This is done by transmitting on different MIDI channels with each one triggering a different sound. Using the Axiom, you can divide the keyboard into sections, with each section transmitting on a different MIDI channel. Furthermore, you can assign the MIDI channel of each physical controller on your Axiom to individual channels—or even tie controls to the different sections of the keyboard you have set. Dividing the keyboard and assigning different channels is done using the Zone feature.

3.6.1 Zones

The Zone feature on your Axiom is used to control several different sound devices at the same time. In doing so, you can create splits, layers, harmony effects and more.

For example, you can split the keyboard on your Axiom so your left hand plays a bass sound and your right hand plays a piano sound. You can create a setting where you hear a chord by playing a single note, or you can set up a way to quickly switch between different instruments. The Zone feature on the Axiom allows you to do all of these things and more.

3.6.2 Activating/Deactivating Zones

There are four zones assignable on the 49- and 61-note versions and three zones assignable on the 25-note version. To activate/deactivate zones, first press the Zone/Group button which will light.

To enable/disable any zone:

- Press the Zone/Group button.
- On 49- and 61-note versions use Zone buttons 1, 2, 3 and 4, located beneath faders D9 through D12 to activate/deactivate Zones 1-4 respectively.
- On the 25-note version, press the LOOP, RW and FF buttons to activate/deactivate zones 1-3 respectively.
- Press the Zone/Group button again to exit.

* When you enable a single zone, the other 2 (or 3) zones are automatically disabled. To enable multiple zones, press the respective zone activate/deactivate buttons at the same time.

The active zones will always be shown on the LCD display

Zones have a number of parameters associated with them and editing these parameters affects all zones that are currently active simultaneously. Editing the various Zone parameters is described below.

The active/inactive status of each zone can be stored to the 20 memory locations. You must ensure Group A is activated when storing this data since the Zone settings are stored within this group. Please see section 3.2.1 for more information on Groups.

3.6.3 Zone Channel

If you want to use the Zone feature to control a number of different instruments, you need to set each of the zones to transmit on different channels.

To assign the channel of a zone:

49- and 61-note versions:

- Press Glob Chan and Zone Range together to access the Zone Channel setting. The LED in the Zone/Group button lights to indicate that Zone/Group mode is automatically selected.
- The LCD displays the current transmit channel for the automatically selected zone and flashes its symbol. Use Zone buttons 1 through 4 to select a different zone if necessary. While multiple zones can be active at the same time, only the zone with the flashing symbol will be affected by this change.
- Enter the new channel number (00 to 16) using the numeric keypad. (Please note that assigning the zone to channel 00, will set the zone to transmit on the Global Channel (see section 2.2)).
- Once the channel edit is complete, Zone/Group mode exits automatically.
- Repeat to edit the channel settings of the remaining zones.

25-note version:

- Press the Advanced button.
- Press the Zone Chan key
- The LCD displays the current transmit channel for the automatically selected zone and flashes its symbol. Use Zone buttons 1, 2 or 3 to select a different zone if necessary. While multiple zones can be active at the same time, only the zone with the flashing symbol will be affected by this change. Enter the new channel number (00 to 16) using the numeric keypad. (Please note that assigning the zone to channel 00, will set the zone to transmit on the Global Channel (see section 2.2).)
- Press the Enter key to confirm.
- Repeat to edit the channel settings of the remaining zones.

The transmit channel of each zone can be stored to the 20 memory locations. You must ensure that Group A is activated when storing this data since the Zone settings are stored within this group.. Please see section 3.2.1 for more information on Groups.

3.6.4 Zone Range

The Zone Range defines the upper and lower limits of the keys contained in a zone.

To set the range of a zone:

- Press the Zone Range button. The LED in the Zone/Group button lights to indicate that Zone/Group mode is automatically selected.
- The LCD display will flash the symbols representing all zones which are currently active, and will therefore be affected by this range setting. The Range symbol will also appear on the LCD display. Use zone buttons 1 through 4 (1-3 on Axiom 25) to change the selection as necessary.
- Press a key on the keyboard to select the lower limit of the zone. The note number is displayed in small digits on the LCD display.
- Press a second key on the keyboard to select the upper limit of the zone. The note number is displayed in large digits of the LCD display.

Once two keys have been pressed, the keyboard will automatically return to normal, and the range of the edited zone will be updated.

***Note**: If multiple zones are selected while altering the zone range setting then they will all be assigned to the same section of the keyboard. This will cause this section of the keyboard to transmit on multiple MIDI channels—a setting useful to create layered sounds. If you want to split the keyboard into individual sections controlling one sound at a time, then make sure that only one zone is selected while configuring the zone range and that you assign a section of the keyboard that is not shared with any other zone. However, it is possible for zones to overlap partially or fully to create the effect of layered sounds.*

The range of each zone can be stored to the 20 memory locations. You must ensure that Group A is activated when storing this data since the Zone settings are stored within this group. Please see section 3.2.1 for more information on Groups.

3.6.5 Octave and Transposition of a Zone

Each zone can be octave shifted or transposed independently.

To set the octave or transposition of a zone:

- Press the Zone Range button.
- Select the zone(s) you want to edit using the zone activate/deactivate buttons as described in section 3.6.2.
- Use the Octave buttons to select the new octave/transpose value, as described in section 2.1.2 and 2.1.3.

If Zone Range mode is not active when you make an octave/transpose change, the change is global, meaning all active zones will be affected.

If Zone Range mode is active when you make an octave/transpose change, only those zones currently active will be affected.

The Octave and Transpose values for each independent zone, as well as the global octave and transpose values can be stored to the 20 memory locations. You must ensure Group A that is activated when storing this data since the Zone settings are stored within this group. Please see section 3.2.1 for more information on Groups.

***Note**: There are various creative possibilities for the usage of the Octave/Transpose settings in conjunction with individual zones. For example, assign three zones to the same section of the keyboard, transpose the second zone two half steps down and the third six half steps down. Make sure all three zones are active, then play a single key on the keyboard—a chord will sound. Experiment with the Octave/Transpose and Zone settings to discover the full potential of this feature.*

3.6.6 More About Program, Bank LSB And Bank MSB

We saw in section 2.3 how Program and Bank messages can be sent from your Axiom to select different sounds on a connected device(s).

When you send these messages, they apply to whichever zones are active at that time. If two zones are selected and set to transmit on different channels, the Program or Bank message will be sent on BOTH channels.

***Note**: New Program and Bank messages always override previously sent Program and Bank messages. It is important to ensure that ONLY those zones that you want to send these messages on are active, or you could call up new sounds on a device you don't intend to.*

The last sent Program, Bank LSB and Bank MSB message for each zone is saved when the unit is powered down, and can be stored in each of the 20 memory locations. You must ensure Group A is activated when storing this data since the Zone settings are stored within this group. Please see section 3.2.1 for more information on Groups.

3.6.7 Individual Channel Assignments of Controls

Every physical controller on your Axiom can be assigned to its own individual channel, allowing you to control several instruments at the same time. It is also possible to tie a physical controller to a zone or to the Global Channel.

To assign the transmit channel for a control:

49- and 61-note versions:

- Select the physical controller as described in section 2.4.2.
- Press the Chan Assign button.
- The LCD display will show the currently assigned MIDI channel.

Use the numeric keypad to enter the new MIDI channel in the range 00 to 20*.

25-note version:

- Select the physical controller as described in section 2.4.2.
- Press the Advanced button.
- Press the Chan Assign key.
- The LCD display will show the currently assigned MIDI channel.

  Use the numeric data entry keys to enter the new MIDI channel in the range 00 to 19*.
- Press the Enter key to confirm.

The channel assignment of each physical controller is saved if the group to which that controller belongs is active when you save to any of the 20 memory locations.

* Please see section 3.6.7.1 for an explanation of channels 17-20.

3.6.7.1 Tying Controls to Zones

If you assign a physical controller to channel 17, 18, 19 or 20 the controller is tied to the transmit channel of Zone 1, Zone 2, Zone 3 or Zone 4 respectively (remember that the 49- and 61-note versions of the Axiom have four possible zones and the 25-note version has three). Therefore, as you alter a zone's channel, you are also altering the physical controller's channel at the same time.

Note that although a physical controller may be tied to a zone, if you want to save this assignment to any of the 20 memory locations, it is necessary to ensure you select the group to which the physical controller belongs. Group A does not cover this.

3.6.7.2 About SysEx Messages and Device ID

System Exclusive (SysEx) messages are not channel specific so when transmitting SysEx messages, the individual physical controller channel number does not define a transmit channel, but a device ID instead. This is a difference that is indicated on the LCD display when it DOES NOT show a 'c' for channel.

Device ID values range from 00 - 127. In most cases, you should set the device ID to 127, which is a value that allows SysEx messages to be received by all connected devices.

Please note that the device ID assigned to a controller cannot be changed using the Dev ID button. This button is used for setting the global device ID of the Axiom.

For more information on Device ID's and SysEx messages please see section 5.3.

3.6.7.3 The Global Channel

The Global Channel of the Axiom can be altered easily on the fly and any physical controller or zone that is assigned to channel 00 will transmit on whatever channel the Global Channel is set to.

The Global Channel can be stored to any of the 20 memory locations, as long as Group A is selected.

3.7 Group A Controls

***Note**: For information on Group A memory recall, please review section 3.2.1.*

The term "Group A controls" refers to the pitch bend wheel, modulation wheel, aftertouch, sustain pedal and expression pedal. Each of these controls differs from other controls on your Axiom because these can be programmed to be active or inactive in each zone independently.

This means for instance, that you can set the sustain pedal to work on Zone 1 but not Zone 2, or the pitch-bend wheel to affect Zone 3 but not Zone 1.

In order for the Group A control to transmit on all zones, the channel assignment must be set to 0. If a Group A control is assigned to any channel other than 0, it will behave in the same way as any other control on your Axiom.

If a Group A control is selected, when you press Ctrl Assign, the MIDI controller message you assign to the Group A control will apply to all the zones that are active at that time. This means the MIDI controller you have assigned to the Group A control will be transmitted on all the channels the selected zones were assigned to.

In order to prevent the Group A control from transmitting on more than one active zone, you can simply assign the Group A control to the desired zone's channel. This will prevent the Group A control from having an affect on any of the other zones, as long as they are not assigned to the same channel.

Alternatively, you can set the controller message to OFF if you do not want a Group A control to affect certain zones:

49- and 61-note versions:

- Select the Group A control.
- Press the Ctrl Assign button. The LED in the Zone/Group button lights to confirm your move.
- Select the zones that you do NOT want the Group A control to affect.
- Use the numeric keypad to set the value to '000' as described in section 2.4.2.
- Press the minus (-) button to set the control to OFF.

25-note version:

- Select the Group A control.
- Press the Advanced button.
- Press the Ctrl Assign key. The LED in the Zone/Group button lights to confirm your move.
- Select the zones that you do NOT want the Group A control to affect.
- Enter the value "000" using the number keys as described in section 2.4.2.
- Press Enter to confirm
- Press the Advanced button again
- Press the Ctrl Assign key again
- Press the minus (-) button to set the control to OFF.
- Press Enter to confirm.

***Note**: If a zone is not enabled, the Group A controller will NOT transmit the data that is assigned to that Zone.*

3.8 Example of Control Functionality

3.8.1 Setting Toggle Values for the Buttons

The assignable buttons and the pedals can each be assigned to toggle between two MIDI controller message values. You may for example want to send out value 15 when you first press the button followed by value 74 when you press the button for a second time.

Setting up a toggle effect:

49- and 61-note versions:

- Select the button or pedal to edit.
- Press the Data 2 button.
- Type in "015" using the numeric keypad. This sets the OFF position value.
- Press the Data 3 button.
- Type in "074" using the numeric keypad. This sets ON position value.

25-note version:

- Select the button or pedal to edit.
- Press the Advanced button.
- Press the Data 2 key.
- Type in "15" using the numeric data entry keys.
- Press the Enter key to confirm. This sets the OFF position value.
- Press the Advanced button again.
- Press the Data 3 key
- Type in '074' using the numeric data entry keys.
- Press the Enter key to confirm. This sets ON position value.

If you want the button to send the same value every time you press it, simply set the same value for both Data 2 and Data 3.

The above method toggles the button each time you press it. It is also possible to set the button to send one value when you press it, and another value when you release it.

Setting up an alternating value effect:

49- and 61-note versions:

- Select the button or pedal to edit.
- Press the Ctrl Assign button.
- Type in "146" using the numeric keypad. This sets the button up for MIDI CC (On/Off) mode, as shown in Appendix E.
- Assign the OFF and ON value using Data 2 (for off value) and Data 3 (for on value) respectively, as detailed in section 3.8.1.

25-note version:

- Select the button or pedal to edit.
- Press the Advanced button.
- Press the Ctrl Assign key.
- Type in "146" using the numeric data entry keys
- Press the Enter key to confirm. This sets the button up for MIDI CC (On/Off) mode, as shown in Appendix E.
- Assign the OFF and ON value using Data 2 (for off value) and Data 3 (for on value) respectively, as detailed in section 3.8.1.

3.8.2 Assigning MMC Messages to a Button

MIDI Machine Control messages are used by some devices and software to control transport functions such as Stop, Play and Record. The Transport controls on your Axiom keyboard can be setup to send MMC messages, however it is important to note, that not all MIDI devices or software applications respond to MMC messages. Even those that do support MMC often need to be set up manually to respond to these messages. Please consult the documentation relating to your device or software application to check this. The MMC message format is a SysEx message, using a single byte to define the message type. The table below lists the currently defined MMC messages:

Number	MMC Command
01	STOP
02	PLAY
03	DEFERRED PLAY
04	FORWARD
05	REWIND
06	RECORD STROBE
07	RECORD EXIT
08	RECORD PAUSE
09	PAUSE
10	EJECT
11	CHASE
12	COMMAND ERROR RESET
13	MMC RESET

To assign the desired MMC message to an assignable button, pad or sustain pedal:

49- and 61-note versions:

- Select the button to edit.
- Press the Ctrl Assign button.
- Type in "149" using the numeric keypad. This is the number that corresponds to the MMC instruction (Appendix E).
- Press the Chan Assign button. Notice the Dev ID symbol on the LCD display flashes indicating you are entering a Device ID, not a channel value.
- Type in "127," using the numeric keypad. This sets the device ID for the SysEx message to 127. (Please see section 3.6.7.2 for more information on Device ID's.)
- Press the Data 2 button.
- Enter a number from the table above to select the message type.

25-note version:

- Select the button to edit.
- Press the Advanced button
- Press the Ctrl Assign key.
- Type in "149" using the numeric data entry keys.
- Press the Enter key to confirm.
- Press the Advanced button again.
- Press the Chan Assign key. Notice the Dev ID symbol on the LCD display flashes indicating you are entering a Device ID, not a channel value.
- Type in "127" using the numeric data entry keys.
- Press the Enter key to confirm. This sets the device ID for the SysEx message to 127. (Please see section 3.6.7.2 for more information on Device IDs.)
- Press the Advanced button.
- Press the Data 2 key.
- Enter a number from the table above to select message type.
- Press the Enter key to confirm.

3.8.3 Assigning RPN/NRPN Messages to a Fader or Encoder

Many of today's synthesizers and music applications can receive and process RPN and NRPN MIDI messages to allow control of an array of useful settings and features. However, RPN/NRPN messages are different from most other MIDI data as they consist of two or more MIDI messages that have to be sent in sequence. Traditionally, you would have to send multiple MIDI messages manually and one by one in order to change a single RPN/NRPN setting on your synthesizer or music software. This can turn into a difficult and lengthy procedure with many MIDI controllers.

The Axiom simplifies this procedure by combining commonly used RPN/NRPN messages and making them accessible just as if they were an extended set of standard MIDI controllers. In addition to the common MIDI controllers 0 -127, the Axiom lets you access RPN/NRPN features through additional controller numbers 128 through 156. The amount of additional MIDI controller numbers depends on the controller type (rotary encoder, fader, pad, etc.). Lists of supported RPN/NRPN messages and the associated extended MIDI controller numbers (sorted by controller type) can be found in Appendices D, E, F and G.

Once assigned to one of your Axiom's controls, complete multi-part RPN/NRPN messages will be transmitted simply by moving a fader or using an encoder or one of the Axiom's other controls.

Assigning your Axiom's faders or encoders to send RPN or NRPN messages is done in the same fashion as assigning a regular MIDI controller.

To assign RPN or NRPN numbers:

49- and 61-note versions:

- Select the control to edit.
- Press the Ctrl Assign button.
- Enter the desired RPN or NRPN number using the numeric keypad.
- The Data 2 button can be used to define the RPN LSB value, while the RPN MSB can be defined using the Data 3 button. This process is detailed in section 3.8.1.

25-note version:

- Select the control to edit.
- Press the Advanced button.
- Press the Ctrl Assign key.
- Enter the desired RPN or NRPN number using the numeric keypad.
- Press the Enter key to confirm.
- Press the Advanced button.
- The Data 2 key can be used to define the RPN LSB value, while the RPN MSB can be defined using the Data 3 key. This process is detailed in section 3.8.1.

You will find that most data sheets for those devices that make use of NRPNs give the MSB and LSB values that you should enter with Data 3 and Data 2 (see Appendix B3 for Roland/XG defined NRPN messages). Some manuals however may only give you the hex values. The Axiom requires you to enter the decimal value. You can convert hexadecimal values to decimal using the table in Appendix H.

For a detailed description of RPN/NRPN data see section 5.2.

Section 4: Usage Examples

4.1 MIDI Out from USB Function

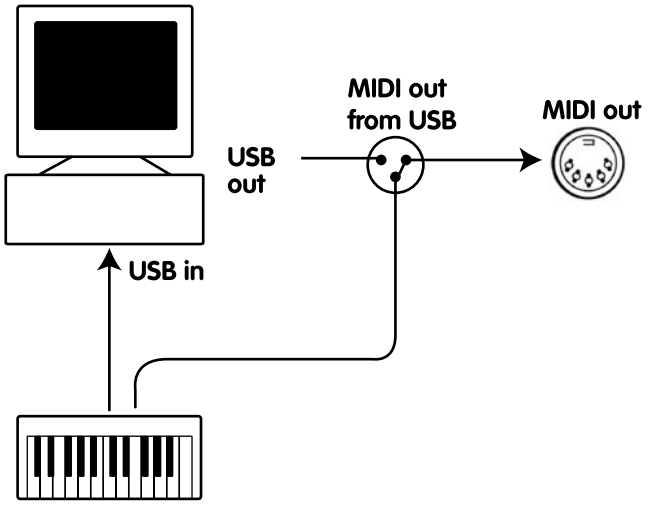
MIDI Out from USB can be used to switch the source of the MIDI data seen at the MIDI Out port of your Axiom.

On initial power up, MIDI Out from USB mode is off. This means that as you play your Axiom, MIDI data will be sent to the MIDI Out port.

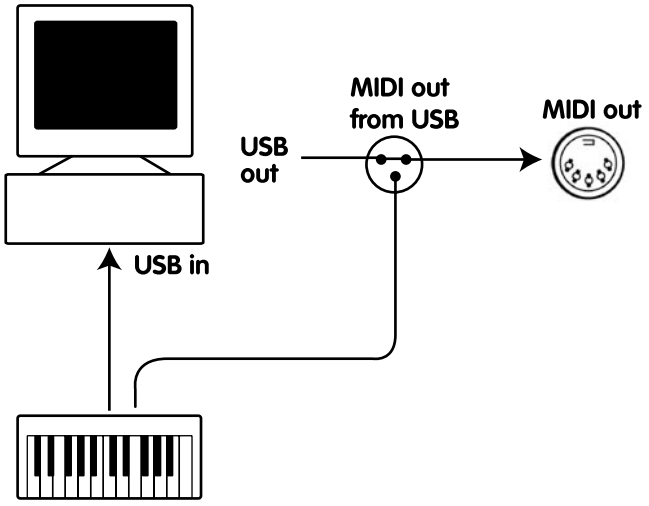
If you turn MIDI Out From USB mode on, playing your Axiom will no longer send data to the MIDI Out port. The data is instead streamed from the computer. So, as long as you have selected your Axiom as the active output port in your computer's sequencer, this is the data that will be sent the MIDI Out port.

For example, if you want to control a sound module from your Axiom, you should ensure MIDI Out from USB remains off. If you want the sound module to play data streamed from your computer however, then you should turn MIDI Out from USB on and ensure that the output port for your Axiom is selected as the computer's MIDI output device (this is done in your computer software).

The following diagrams clarify the routing of MIDI data when MIDI out from USB mode is both off and when it is on:



MIDI Out from USB mode is off.



MIDI Out from USB mode is on.

To control MIDI out from USB mode:

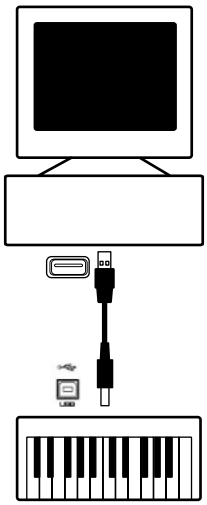
49- and 61-note versions:

- Press Data 2 and Data 3 together to change the MIDI Out setting to MIDI Out from USB.
- You will see a MIDI plug symbol appear on the LCD display.
- To turn MIDI Out from USB mode back off, press the same button combination again. When you do this, the MIDI plug symbol disappears.

25-note version:

- Press the Advanced button.
- Press the MIDI Out key to activate MIDI Out from USB.
- You will see a MIDI plug symbol appear on the LCD display.
- To turn MIDI Out from USB mode back off, repeat these steps. When you do this, the MIDI plug symbol disappears.

4.2 Recording Your Performance On A Sequencer



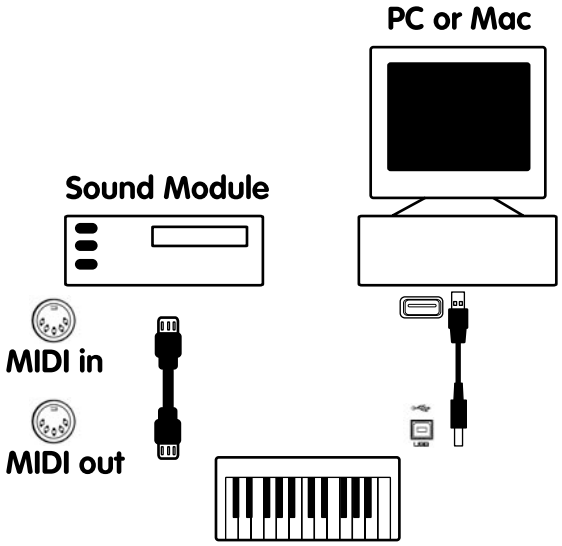
A MIDI sequencer will allow you to record, play back, store and edit MIDI data. Although hardware sequencers exist, we will focus on the more commonly used software sequencers in this manual. Examples of popular software sequencers are Pro ToolsTM, CubaseTM and LogicTM, although there are many different sequencing applications available for your computer.

In order to use the Axiom with your sequencer, you need to set up the sequencer software so that the Axiom is recognized as the sequencer's MIDI input device.

You need to choose a MIDI output device that is capable of making sound when MIDI data is sent to it. This may be a soundcard on your computer, a VST instrument or a sound module connected to a MIDI port which is in turn connected to your computer. Please consult your sequencer's user manual for more information on how this is done. In this manual, section 1.3.3, "Using The Axiom With Your software" details how the Axiom will appear in the device listing of your sequencer.

With the Axiom set up to communicate with the sequencer, data will go into the sequencer and will be routed to a virtual synth within the sequencer software or sent to an external sound module via a MIDI output port. The virtual synthesizer or external sound module will turn the MIDI data into audible sounds. You can then record the incoming MIDI data and edit your performance using your sequencer.

4.3 Controlling a Sound Module from the Computer



By turning on MIDI Out from USB mode (section 4.1), the data coming into the Axiom from the computer will go directly out of the MIDI Out port and trigger the sounds in the external sound module. This means that your Axiom is effectively acting as a USB to MIDI interface. In order to channel MIDI data from the computer to the MIDI Out port, you should set the MIDI Output device on your computer to be the Axiom.

Alternatively, you may want to merge the MIDI data from your Axiom with the data from the computer. This would allow you to play and record to a sequencer, and play back the entire performance on a sound module connected to the MIDI Out port of your Axiom. To do this:

- Set MIDI Out from USB mode on (section 4.1).
- Select the Axiom as the MIDI Input device in your sequencer.
- Select the Axiom as the MIDI Output device in your sequencer.

Section 5: MIDI Messages Explained

5.1 Program & Bank Changes Explained

The original GM MIDI Specification was designed to access only 128 different sounds using Program Change messages (0-127).

As MIDI devices grew to be more sophisticated and contain more sounds, Bank Change messages were included in the specification to allow for more than 128 sounds to be accessed. Within each bank there are a possible 128 different sound patches that can be accessed using the standard Program Change command. Using the expanded 14-bit Bank Change command, there are now 16,384 banks available—each with 128 sounds patches. Technically speaking, the first 7 bits of the 14-bit Bank Change message are sent in a single byte known as the Bank LSB. The last 7 bits define another byte known as the Bank MSB. The Bank LSB is the most commonly used. This allows for 128 bank changes, and often there is no need to send a Bank MSB.

You will find almost all MIDI devices respond to Program Change commands and many are organized according to the GM listing. In all General MIDI devices, the different sounds are always organized in the same way from device to device, so the piano sounds are in their particular place, the string sounds are in their place, the drum sounds and so on. All GM devices (both hardware and software sound modules) are clearly labeled as such, so you know that their sounds are organized in the General MIDI structure. So when a GM device receives a MIDI Program Change, it calls up a type of sound that you expect from the GM sound set. All non-GM devices call up unique sounds from their memory upon receiving MIDI Program Changes. Since the sounds in a non-GM device are not arranged in a particular order, you need to take a look at the device itself to see which sound you want and at which location in the memory it resides. Many VST instruments such as Native Instruments' FM7 or the synth modules in Reason are non-GM devices.

Bank Change messages are useful when calling up sounds from a large library that may exist in a particular sound module or software synth. For example devices that are built with Roland's GS specification or Yamaha's XG specification require you to specify a Bank Change in order to access the extra voices and effects that these devices provide.

Sending Program, Bank LSB and Bank MSB data is made simple using the Axiom. Please consult section 2.3 to see how this is done.

5.2 RPN/NRPNs Explained

Non-registered parameter numbers (NRPN's) are device specific messages that enable you to control synths and sound modules via MIDI. The MIDI specification defines open parameter numbers to allow manufacturers to specify their own controllers. The more common of these are registered by the MIDI Manufacturer's Association and are now part of the MIDI specification (hence the term Registered Parameter Numbers – RPN's). (See Appendix F.) Each NRPN/RPN has an associated 2-byte number. The two bytes allow for 127 values each. (An RPN or NRPN message is made up of two parts. One is called the 'Most Significant Byte' or MSB and one is called the 'Least Significant Byte' or LSB. Both these messages together constitute an RPN or NRPN command.) This allows for 16,129 values in total!

MIDI controllers 98 and 99 represent the NRPN LSB and MSB respectively, while 100 and 101 represent the RPN LSB and MSB (see the MIDI controllers list in Appendix D). To transmit an NRPN/RPN, these two controller messages are sent along with their user-specified values. A further controller message and value needs to be sent to specify the (coarse or fine) value adjustment. This is specified by controller number 6 (Data entry) for coarse adjustments or number 38 for fine adjustments.

A list of NRPN's is always given in the user's manual of any device that receives NRPN messages. It is always necessary that the NRPN MSB and LSB be sent together. Both will be specified in the device's manual. You may find the manufacturers have specified the numbers in hexadecimal format only. In this case, use Appendix H to translate the value to Decimal.

Your Axiom keyboard makes the process of transmitting NRPN's easy. Please consult section 3.8.3 to see how this is done.

5.3 SysEx Explained

System Exclusive (SysEx) messages were defined in the MIDI specification to allow individual devices to have undefined function control via MIDI. The format of SysEx messages allows for virtually any function to be performed via MIDI—so long as the receiving device is able to translate the message and act accordingly. This allows devices to send audio sample memory data, memory dumps, controller settings and much more. It also allows the controllers of one device to be controlled by another.

It is not possible to program your own specified SysEx message into the Axiom. However, there are some useful SysEx messages pre-programmed into the keyboard that can be accessed by assigning the appropriate MIDI CC to a controller (see Appendices D-G).

It should be noted that a SysEx message is not transmitted on any specified channel. All SysEx messages contain a device ID that is used to identify which of the connected devices should respond to the SysEx message. All other devices are ignored. If you are using a SysEx message on the Axiom, the global channel is ignored. When you press the Chan Assign key, instead of entering a channel for the controller, you will be entering a device ID instead. This is indicated by the fact that the LED displays a 3-digit number, not a 2-digit number preceded by a "c."

Device ID's values range from 00 to 127. 127 is the default device number setting on the Axiom. This setting transmits the SysEx message to all devices.

Although it is not possible to program the controllers of the Axiom with your own SysEx messages, there are software applications that can receive a MIDI input signal and transmit a different, user specified message. You can program your SysEx messages into the translator software such as MIDI OX, then translate the incoming data from the keyboard to your own SysEx, depending on the controller you are using.

And finally...

If you are still having trouble with any of the features on the Axiom, please consult the following Troubleshooting Guide, which answers some frequently asked questions. If you are still not able to find the answer you are looking for, please feel free to contact M-Audio technical support for further assistance. Support details are given following the Troubleshooting Guide below.

Section 6: Troubleshooting

The Axiom has been designed to give you high performance MIDI control. It has been tested under a wide range of systems and operating conditions. However, there are virtually limitless numbers of operating scenarios, any of which could affect your system's performance. Though this section cannot cover all possible situations you may encounter, we would like to offer some suggestions for dealing with common problems.

If you are connecting to a computer, we recommend that you avoid connecting too many devices to your computer at the same time. The more devices you have connected to the computer, the greater the load on the computer's CPU. Although it is possible in theory to connect multiple USB devices at the same time, doing so may degrade your system's performance.

My Axiom suddenly stopped working after having performed well since installation on a computer.

- Switch off the unit and leave it off for 10 seconds. Then restart your computer, power up your Axiom and try again. If the problem persists, you may have to reinstall the drivers for the unit. The latest drivers are available at http://www.m-audio.com.

I have plugged in a Sustain pedal to my Axiom, but it works backwards.

- The polarity of the Sustain pedal is calculated by the Axiom when it is powered up. On power up, the Sustain pedal is assumed to be in the off position. So, if you want the Sustain pedal to be off when it is not depressed, make sure not to press the pedal when you power up. To reverse the pedal polarity, just press and hold the pedal when you power up. Note: this will have to be done each time you power up the Axiom.

I have connected the Axiom to my computer. When I press a key, there is a delay before I hear any sound.

- This delay is known as latency. Latency with MIDI signals is caused at the computer and is not coming from the Axiom. This may be due to the CPU load of the soft-synth you are using. MIDI data is simply control data. MIDI data is read by the soft synth; the soft synth then completes a large number of complex calculations in order to produce the sound you hear, and all of this processing activity takes time. If you already have adjusted the appropriate parameters relating to latency on your sound card, try re-installing the latest drivers for the sound card, or try reducing the buffer sizes of the sound card. If you are using a host application, check its buffer size settings as most applications allow for user adjustment to improve timing.
- *PC only*: If your soundcard supports ASIO or WDM then you should use these drivers. It is suggested that you avoid using the MME drivers which are older and less efficient in design and will have a much higher latency. In the audio settings for your application please select the ASIO driver if available.
- For more information on latency reduction please consult the knowledgebase at http://www.m-audio.com.
- If you feel that you may need to upgrade your soundcard, please visit http://www.m-audio.com.

Section 7: Contact

If you have any questions, comments or suggestions about this or any M-Audio product, we invite you to contact us by using the following information:

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Section 8: Technical Info

Caution: Electro Static Discharge, Electrical Fast Transient and Conducted RF interference may cause the unit malfunctioning. In such case, unplug the unit and plug it in again to restore normal operation.

Note: Your M-Audio product has been tested to comply with FCC Standards FOR HOME OR OFFICE USE. Modifications not authorized by the manufacturer may void users authority to operate this device.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

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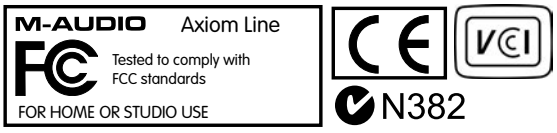
Section 9: Warranty Terms and Registration

Warranty Terms

M-Audio warrants products to be free from defects in materials and workmanship, under normal use and provided that the product is owned by the original, registered user. Visit www.m-audio.com/warranty for terms and limitations applying to your specific product.

Warranty Registration

Thank you for registering your new M-Audio product. Doing so immediately both entitles you to full warranty coverage and helps M-Audio develop and manufacture the finest quality products available. Register online at www.m-audio.com/register to receive FREE product updates.



Section 10: Appendices

Appendix A - MIDI IMPLEMENTATION CHART

Function	Transmitted	Received	Remarks
Basic :Default Channel:Changed	1-16 1-16	X	
:Default Mode :Messages :Altered	--------- X ********	X	
Note Number:True Voice	0-127 ********	X	
Velocity: Note ON : Note OFF	0 X	X	
Aftertouch : Keys :Ch's	X 0	X	
Pitch Bend	0	X	
Control 0-119 Change 120-127	0 0	X X	
Program Change:True Number	0-127 ********	X	
System Exclusive	GM, GM2, MMC	Memory Dump	
Song Position Common:Song Select	X X	X	
System :Clock Exclusive:Commands	X X	X	
Aux :Local ON/OFF Messages :All Notes OFF :Active Sense :Reset	0 0 0 0	X	
Notes:	0 = YES	X=NO	

Appendix B – Useful MIDI Data Tables

B1 - General MIDI Instruments – Program Change Numbers

Piano	Bass	Reed	Synth Effects
0 Acoustic Grand Piano	32 Acoustic Bass	64 Soprano Sax	96 SFX Rain
1 Bright Acoustic Piano	33 Fingered Bass	65 Alto Sax	97 SFX Soundtrack
2 Electric grand Piano	34 Electric Picked Bass	66 Tenor Sax	98 SFX Crystal
3 Honky Tonk Piano	35 Fretless Bass	67 Baritone Sax	99 SFX Atmosphere
4 Electric Piano 1	36 Slap Bass 1	68 Oboe	100 SFX Brightness
5 Electric Piano 2	37 Slap Bass 2	69 English Horn	101 SFX Goblins
6 Harpsichord	38 Syn Bass 1	70 Bassoon	102 SFX Echoes
7 Clavinet	39 Syn Bass 2	71 Clarinet	103 SFX Sci-Fi
Chromatic Percussion	**Strings/Orchestra**	**Pipe**	**Ethnic**
8 Celesta	40 Violin	72 Piccolo	104 Sitar
9 Glockenspiel	41 Viola	73 Flute	105 Banjo
10 Music Box	42 Cello	74 Recorder	106 Shamisen
11 Vibraphone	43 Contrabass	75 Pan Flute	107 Koto
12 Marimba	44 Tremolo Strings	76 Bottle Blow	108 Kalimba
13 Xylophone	45 Pizzicato Strings	77 Shakuhachi	109 Bag Pipe
14 Tubular bells	46 Orchestral Harp	78 Whistle	110 Fiddle
15 Dulcimer	47 Timpani	79 Ocarina	111 Shanai
Organ	**Ensemble**	**Synth Lead**	**Percussive**
16 Drawbar Organ	48 String Ensemble 1	80 Syn Square Wave	112 Tinkle Bell
17 Percussive Organ	49 String Ensemble 2	81 Syn Sawtooth Wave	113 Agogo
18 Rock Organ	50 Syn Strings 1	82 Syn Calliope	114 Steel Drums
19 Church Organ	51 Syn Strings 2	83 Syn Chiff	115 Woodblock
20 Reed Organ	52 Choir Aahs	84 Syn Charang	116 Taiko Drum
21 Accordion	53 Voice Oohs	85 Syn Voice	117 Melodic Tom
22 Harmonica	54 Syn Choir	86 Syn Sawtooth Wave	118 Syn Drum
23 Tango Accordion	55 Orchestral Hit	87 Syn Brass & Lead	119 Reverse Cymbal
Guitar	**Brass**	**Synth Pad**	**Sound Effects**
24 Nylon Acoustic	56 Trumpet	88 New Age Syn Pad	120 Guitar Fret Noise
25 Steel Acoustic	57 Trombone	89 Warm Syn Pad	121 Breath Noise
26 Jazz Electric	58 Tuba	90 Polysynth Syn Pad	122 Seashore
27 Clean Electric	59 Muted Trumpet	91 Choir Syn Pad	123 Bird Tweet
28 Muted Electric	60 French Horn	92 Bowed Syn Pad	124 Telephone Ring
29 Overdrive	61 Brass Section	93 Metal Syn Pad	125 Helicopter
30 Distorted	61 Syn Brass 1	94 Halo Syn Pad	126 Applause
31 Harmonics	62 Syn Brass 2	95 Sweep Syn Pad	127 Gun Shot

B2 - General MIDI Note Numbers

Octave	Note Numbers											
	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
-1	0	1	2	3	4	5	6	7	8	9	10	11
0	12	13	14	15	16	17	18	19	20	21	22	23
1	24	25	26	27	28	29	30	31	32	33	34	35
2	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59
4	60	61	62	63	64	65	66	67	68	69	70	71
5	72	73	74	75	76	77	78	79	80	81	82	83
6	84	85	86	87	88	89	90	91	92	93	94	95
7	96	97	98	99	100	101	102	103	104	105	106	107
8	108	109	110	111	112	113	114	115	116	117	118	119
9	120	121	122	123	124	125	126	127				

B3 - Roland GS And Yamaha XG NRPN Messages

NRPN MSB CC99	NRPN LSB CC98	Data MSB CC06	Data LSB CC38
01	08 00-7F	n/a	(-64 - 0 - +63) Vibrato Rate (relative change)
01	09 00-7F	n/a	(-64 - 0 - +63) Vibrato Depth (relative change)
01	0A 00-7F	n/a	(-64 - 0 - +63) Vibrato Delay (relative change)
01	20 00-7F	n/a	(-64 - 0 - +63) Filter Cutoff Freq. (relative change)
01	21 00-7F	n/a	(-64 - 0 - +63) Filter Resonance (relative change)
01	63 00-7F	n/a	(-64 - 0 - +63) EG (TVF&TVA) Attack Time (relative change)
01	64 00-7F	n/a	(-64 - 0 - +63) EG (TVF&TVA) Decay Time (relative change)
01	66 00-7F	n/a	(-64 - 0 - +63) EG (TVF&TVA) Release Time (relative change)
*14	00-7F 00-7F	n/a	(-64 - 0 - +63) Drum Filter Cutoff Freq. (relative change)
*15	00-7F 00-7F	n/a	(-64 - 0 - +63) Drum Filter Resonance (relative change)
*16	00-7F 00-7F	n/a	(-64 - 0 - +63) Drum EG Attack Rate (relative change)
*17	00-7F 00-7F	n/a	(-64 - 0 - +63) Drum EG Decay Rate (relative change)
18	00-7F 00-7F	n/a	(-64 - 0 - +63) Drum Instrument Pitch Coarse (relative change)
*19	00-7F 00-7F	n/a	(-64 - 0 - +63) Drum Instrument Pitch Fine (relative change)
1A	00-7F 00-7F	n/a	(0 to Max) Drum Instrument Level (absolute change)
1C	00-7F 00-7F	n/a	(Random, L>C>R) Drum Instrument Panpot (absolute change)
1D	00-7F 00-7F	n/a	(0 to Max) Drum Instrument Reverb Send Level (absolute change)
1E	00-7F 00-7F	n/a	(0 to Max) Drum Instrument Chorus Send Level (absolute change)
%1F	00-7F 00-7F	n/a	(0 to Max) Drum Instrument Variation Send Level (absolute change)

* added by Yamaha XG; % changed from Delay to Variation by Yamaha XG

B4 - GM2 Reverb Types

0: Small Room

1: Medium Room

2: Large Room

3: Medium Hall

4: Large Hall

8: Plate

B5 - GM2 Chorus Types

0: Chorus 1

1: Chorus 2

2: Chorus 3

3: Chorus 4

4: FB Chorus

5: Flanger

B4 – General MIDI Drums – Note assignments

MIDI Note	Drum Sound	MIDI Note	Drum Sound
35	Acoustic Bass Drum	59	Ride Cymbal 2
36	Bass Drum 1	60	Hi Bongo
37	Side Stick	61	Low Bongo
38	Acoustic Snare	62	Mute Hi Conga
39	Hand Clap	63	Open Hi Conga
40	Electric Snare	64	Low Conga
41	Low Floor Tom	65	High Timbale
42	Closed Hi-Hat	66	Low Timbale
43	High Floor Tom	67	High Agogo
44	Pedal Hi-Hat	68	Low Agogo
45	Low Tom	69	Cabasa
46	Open Hi-Hat	70	Maracas
47	Low-Mid Tom	71	Short Whistle
48	Hi-Mid Tom	72	Long Whistle
49	Crash Cymbal 1	73	Short Guiro
50	High Tom	74	Long Guiro
51	Ride Cymbal 1	75	Claves
52	Chinese Cymbal	76	Hi Wood Block
53	Ride Bell	77	Low Wood Block
54	Tambourine	78	Mute Cuica
55	Splash Cymbal	79	Open Cuica
56	Cowbell	80	Mute Triangle
57	Crash Cymbal 2	81	Open Triangle
58	Vibraslap		

Appendix C - General MIDI Controller Numbers (MIDI CC's)

00	Bank Select	49	Gen Purpose 2 LSB	98	Non-Reg Param LSB
01	Modulation	50	Gen Purpose 3 LSB	99	Non-Reg Param MSB
02	Breath Control	51	Gen Purpose 4 LSB	100	Reg Param LSB
03	Controller 3	52	Controller 52	101	Reg Param MSB
04	Foot Control	53	Controller 53	102	Controller 102
05	Porta Time	54	Controller 54	103	Controller 103
06	Data Entry	55	Controller 55	104	Controller 104
07	Channel Volume	56	Controller 56	105	Controller 105
08	Balance	57	Controller 57	106	Controller 106
09	Controller 9	58	Controller 58	107	Controller 107
10	Pan	59	Controller 59	108	Controller 108
11	Expression	60	Controller 60	109	Controller 109
12	Effects Controller 1	61	Controller 61	110	Controller 110
13	Effects Controller 2	62	Controller 62	111	Controller 111
14	Controller 14	63	Controller 63	112	Controller 112
15	Controller 15	64	Sustain Pedal	113	Controller 113
16	Gen Purpose 1	65	Portamento	114	Controller 114
17	Gen Purpose 2	66	Sostenuto	115	Controller 115
18	Gen Purpose 3	67	Soft Pedal	116	Controller 116
19	Gen Purpose 4	68	Legato Pedal	117	Controller 117
20	Controller 20	69	Hold 2	118	Controller 118
21	Controller 21	70	Sound Variation	119	Controller 119
25	Controller 25	74	Cut-off Frequency	**Channel Mode Messages**	
26	Controller 26	75	Controller 75	120	All Sound Off
27	Controller 27	76	Controller 76	121	Reset all Controllers
28	Controller 28	77	Controller 77	122	Local Control
29	Controller 29	78	Controller 78	123	All Notes Off
30	Controller 30	79	Controller 79	124	Omni Off
31	Controller 31	80	Gen Purpose 5	125	Omni On
32	Bank Select LSB	81	Gen Purpose 6	126	Mono On (Poly Off)
33	Modulation LSB	82	Gen Purpose 7	127	Poly On (Mono Off)
34	Breath Control LSB	83	Gen Purpose 8	**Additional Messages**	
35	Controller 35	84	Portamento Control	128	Pitch Bend sensitivity
36	Foot Control LSB	85	Controller 85	129	Fine Tune
37	Porta Time LSB	86	Controller 86	130	Coarse Tune
38	Data Entry LSB	87	Controller 87	131	Channel Aftertouch
39	Channel Volume LSB	88	Controller 88		
40	Balance LSB	89	Controller 89		
41	Controller 41	90	Controller 90		
42	Pan LSB	91	Reverb Depth		
43	Expression LSB	92	Tremelo Depth		
44	Controller 44	93	Chorus Depth		
45	Controller 45	94	Celeste (De-tune)		
46	Controller 46	95	Phaser Depth		
47	Controller 47	96	Data Increment		
48	Gen Purpose 1 LSB	97	Data Decrement		

Appendix D – Assignable Controller Numbers to Linear Controllers

This table applies to the following controls on your Axiom:

- Sliders
- Aftertouch strip
- Pitch bend wheel
- Modulation wheel
- Expression pedal

MIDI CC	Description	Data 1	Data 2	Data 3
0-119	Standard MIDI CC's	-	MIN	MAX
120-127	Channel Mode Messages	-	MIN	MAX
128	Pitch Bend Sensitivity	-	-	-
129	Channel Fine Tune	-	-	-
130	Channel Coarse Tune	-	-	-
131	Channel Pressure	-	-	-
132	RPN coarse	-	RPN LSB	RPN MSB
133	RPN fine	-	RPN LSB	RPN MSB
134	NRPN coarse	-	NRPN LSB	NRPN MSB
135	NRPN fine	-	NRPN LSB	NRPN MSB
136	Master Volume GM*	-	-	-
137	Master Pan GM*	-	-	-
138	Master Coarse Tune GM*	-	-	-
139	Master Fine Tune GM*	-	-	-
140	Chorus Mod Rate GM2*	-	-	-
141	Chorus Mod Depth GM2*	-	-	-
142	Feedback GM2*	-	-	-
143	Send to Reverb GM2*	-	-	-
144	Pitch Bend	-	Pitch Bend MIN	Pitch Bend MAX
255	Controller Off***	-	-	-

* SysEx messages—for details please see section 3.6.7.2.

** MMC SysEx messages, for details please see section 3.8.2..

*** This value cannot be typed in using the numeric keypad. Type in 0 and then press the '-' button to set this value.

Appendix E – Assignable Controller Numbers to Non-Linear Controllers

This table applies to the following controls on your Axiom:

- Assignable buttons (Axiom 49/61 only)
- Transport controls
- Sustain pedal

MIDI CC	Description	Data 1	Data 2	Data 3
0-119	Standard MIDI CC's	-	Toggle Value 2	Toggle Value 1
120-127	Channel Mode Messages	-	Toggle Value 2	Toggle Value 1
128	Pitch Bend Range	-	Sensitivity Value	-
129	Channel Fine Tune	-	Tuning Amount	-
130	Channel Coarse Tune	-	Tuning Amount	-
131	Channel Pressure	-	Pressure Amount	-
132	RPN Coarse	Value	RPN LSB	RPN MSB
133	RPN Fine	Value	RPN LSB	RPN MSB
134	NRPN Coarse	Value	NRPN LSB	NRPN MSB
135	NRPN Fine	Value	NRPN LSB	NRPN MSB
136	Master Volume GM*	-	Volume LSB	Volume MSB
137	Master Pan GM*	-	Pan LSB	Pan MSB
138	Master Coarse Tune GM*	-	Tuning LSB	Tuning MSB
139	Master Fine Tune GM*	-	Tuning LSB	Tuning MSB
140	Chorus Mod rate GM2*	-	Mod Rate	-
141	Chorus Mod Depth GM2*	-	Mod Depth	-
142	Feedback GM2*	-	Feedback Level	-
143	Send to Reverb GM2*	-	Reverb Send Level	-
144	Pitch Bend	-	Pitch Shift LSB	Pitch Shift MSB
145	Program/Bank Preset	Program	Bank LSB	Bank MSB
146	MIDI CC (on/off)	MIDI CC	Button Press Value	Button Release Value
147	Note (on/off)	Note	Velocity Off	Velocity On
148	Note (on/off toggle)	Note	Velocity Off	Velocity On
149	MMC Command**	-	Command Select	-
150	Reverb type GM2 *	-	Type	-
151	Reverb time GM2 *	-	Time	-
152	Chorus type GM2*	-	Type	-
153	MIDI CC Decrement	MIDI CC	Start Value	End Value
154	MIDI CC Increment	MIDI CC	Start Value	End Value
155	Program decrement	-	Start Value	End Value
156	Program increment	-	Start Value	End Value
255	Controller Off***	-	-	-

* SysEx messages—for details please see section 3.6.7.2.

** MMC SysEx messages, for details please see section 3.8.2..

*** This value cannot be typed in using the numeric keypad. Type in 0 and then press the '-' button to set this value.

Appendix F – Assignable Controller Numbers to Rotary Encoders

This table only applies to the Rotary encoders on your Axiom

MIDI CC	Description	Data 1	Data 2	Data 3
0-119	Standard MIDI CC's	-	MIN	MAX
120-127	Channel Mode Messages	-	MIN	MAX
128	Pitch Bend Sensitivity	-	-	-
129	Channel Fine Tune	-	-	-
130	Channel Coarse Tune	-	-	-
131	Channel Pressure	-	-	-
132	RPN coarse	-	RPN LSB	RPN MSB
133	RPN fine	-	RPN LSB	RPN MSB
134	NRPN coarse	-	NRPN LSB	NRPN MSB
135	NRPN fine	-	NRPN LSB	NRPN MSB
136	Master Volume GM*	-	-	-
137	Master Pan GM*	-	-	-
138	Master Coarse Tune GM*	-	-	-
139	Master Fine Tune GM*	-	-	-
140	Chorus Mod rate GM2*	-	-	-
141	Chorus Mod Depth GM2*	-	-	-
142	Feedback GM2*	-	-	-
143	Send to Reverb GM2*	-	-	-
144	Pitch Bend	-	Pitch Bend MIN	Pitch Bend MAX
145	Program Change increment/decrement	-	MIN	MAX
146	2's comp from 64 / Relative (binary offset)	-	MIDI CC	-
147	2's comp from 0 / Relative (2's comp)	-	MIDI CC	-
148	Sign Magnitude / Relative (signed bit)	-	MIDI CC	-
149	Sign Magnitude / Relative (signed bit 2)	-	MIDI CC	-
150	Single Value increment/decrement	-	MIDI CC	-
151	RPN increment/decrement message	-	MIDI CC	-
152	NRPN increment/decrement message		MIDI CC	
255	Controller Off***	-	-	-

* SysEx messages - for details please see section 3.6.7.2.

** MMC SysEx messages, for details please see section 3.8.2.

*** This value cannot be typed in using the numeric keypad. Type in 0 and then press the '-' button to set this value.

Appendix G – Assignable Controller Numbers to Pressure Pads

This table only applies to the pressure Pads on your Axiom

MIDI CC	Description	Data 1	Data 2	Data 3
0-119	Standard MIDI CC's	-	MIN	MAX
120-127	Channel Mode Messages	-	MIN	MAX
128	Pitch Bend Range	-	-	-
129	Channel Fine Tune	-	-	-
130	Channel Coarse Tune	-	-	-
131	Channel Pressure	-	-	-
132	RPN Coarse	-	RPN LSB	RPN MSB
133	RPN Fine	-	RPN LSB	RPN MSB
134	NRPN Coarse	-	NRPN LSB	NRPN MSB
135	NRPN Fine	-	NRPN LSB	NRPN MSB
136	Master Volume GM*	-	-	-
137	Master Pan GM*	-	-	-
138	Master Coarse Tune GM*	-	-	-
139	Master Fine Tune GM*	-	-	-
140	Chorus Mod Rate GM2*	-	-	-
141	Chorus Mod Depth GM2*	-	-	-
142	Feedback GM2*	-	-	-
143	Send to Reverb GM2*	-	-	-
144	Pitch Bend	-	Pitch bend MIN	Pitch bend MAX
145	Program Change	-	Program	-
146	MIDI CC (On/Off)	-	MIDI CC	On Value (Off value is 0)
147	Note (On/Off)	-	Note	Locked Velocity
148	Note (On/Off toggle)	-	Note	Locked Velocity
149	MMC Command**	-	-	-
150	Reverb Type GM2 *	-	-	-
151	Reverb Time GM2 *	-	-	-
152	Chorus Type GM2*	-	-	-
153	MIDI CC Decrement	-	MIDI CC	End Value
154	MIDI CC Increment	-	MIDI CC	End Value
155	Program Decrement	-	Start Value	End Value
156	Program Increment	-	Start Value	End Value
255	Controller Off***	-	-	-

* SysEx messages - for details please see section 3.6.7.2.

** MMC SysEx messages, for details please see section 3.8.2.

*** This value cannot be typed in using the numeric keypad. Type in 0 and then press the - button to set this value.

Appendix H - Hexadecimal Conversion Chart

Hexadecimal value	Decimal value	Hexadecimal value	Decimal value	Hexadecimal value	Decimal value
0	0	2B	43	56	86
1	1	2C	44	57	87
2	2	2D	45	58	88
3	3	2E	46	59	89
4	4	2F	47	5A	90
5	5	30	48	5B	91
6	6	31	49	5C	92
7	7	32	50	5D	93
8	8	33	51	5E	94
9	9	34	52	5F	95
0A	10	35	53	60	96
0B	11	36	54	61	97
0C	12	37	55	62	98
0D	13	38	56	63	99
0E	14	39	57	64	100
0F	15	3A	58	65	101
10	16	3B	59	66	102
11	17	3C	60	67	103
12	18	3D	61	68	104
13	19	3E	62	69	105
14	20	3F	63	6A	106
15	21	40	64	6B	107
16	22	41	65	6C	108
17	23	42	66	6D	109
18	24	43	67	6E	110
19	25	44	68	6F	111
1A	26	45	69	70	112
1B	27	46	70	71	113
1C	28	47	71	72	114
1D	29	48	72	73	115
1E	30	49	73	74	116
1F	31	4A	74	75	117
20	32	4B	75	76	118
21	33	4C	76	77	119
22	34	4D	77	78	120
23	35	4E	78	79	121
24	36	4F	79	7A	122
25	37	50	80	7B	123
26	38	51	81	7C	124
27	39	52	82	7D	125
28	40	53	83	7E	126
29	41	54	84	7F	127
2A	42	55	85		

Appendix I – Factory Presets

Your M-Audio Axiom keyboard comes with 20 preset setups which allow you to use the keyboard controller with supported software right out of the box.

See section 3.2 for instructions on how to load a factory preset.

Preset	Application	Preset	Application
1	General MIDI	11	Propellerhead Reason NN-19
2	GForce Oddity	12	Propellerhead Reason Effects
3	GForce ImpOSCar	13	Native Instruments B4
4	GForce Minimonsta:Melohman	14	Inc/dec GM set up with 2's comp data format
5	Way Out Ware TimewARP 2600	15	GM sequencer mixer set up
6	Wizoo Darbuka/Latigo	16	GS/XG NRPN set up
7	Propellerhead Reason Mixer	17	Unassigned MIDI controllers (Ableton Live)
8	Propellerhead Reason Subtractor	18	Linplug/Doepfer inc/dec method
9	Propellerhead Reason Malström	19	2's compliment inc/dec method
10	Propellerhead Reason Dr.Rex	20	Unassigned controllers – binary offset inc/dec

***Important Note**: When you perform a device reset as described in section 2.4.4, all of the factory presets are lost. To restore the factory presets, please use the Enigma software, available as a free download at www.m-audio.com*

With some of these applications it is necessary to set up your Axiom keyboard within the software.

How to use the Axiom with Ableton Live

Ableton Live does not have any default MIDI controller assignments but it is possible to make your own very quickly and easily using the MIDI Learn function. It is best to use Preset 17 with Live, since it is programmed with a selection of unassigned MIDI controllers.

1) Set up your Axiom selected as the remote control device:
   - Select Preferences from the Options menu (PC) or Live menu (Mac).
   - Click on the MIDI/Sync tab.
   - In the Input column, set your Axiom keyboard remote setting to ON.
2) Close the Preferences window.
3) Click on the MIDI button in the top right hand corner.
4) Click on the parameter you want to control.
5) Move the desired control on your Axiom.
6) When you have finished making all your assignments, click on the MIDI button in the top right hand corner to exit Live's MIDI Map mode.

We recommend that you use Preset 17 when setting up controls in Ableton Live. If you wish to take advantage of the endless encoder functionality, then use preset 20. The encoders loaded from Preset 20 will send relative (binary offset) increment/decrement MIDI messages. The pads on both Presets 17 and 20 are assigned to trigger the eight samples in Live's Impulse module.

Preset 4: GForce Minimonsta

In order to select your Axiom keyboard as the MIDI input device for Minimonsta:

- Click on the Setup button just above Minimonsta's keyboard.
- Select your Oxygen keyboard from the menu that appears (displayed by name or as "USB audio device" on PC and "CoreMIDI In interface" on Mac.)

Preset 5: Way Out Ware TimewARP 2600

To use this preset:

- Click on the TimewARP 2600 logo.
- Select Load MIDI map.
- Select the default map and click OK.

The trigger pads are assigned to send controller data in this preset. The pads on the left will control the filter cut-off and resonance. The other pads can be assigned to any control you choose. To assign the pads, hold down SHIFT (Windows) or CONTROL (Mac) and click on a control. Make sure "MIDI learn" is ticked in TimewARP's Global MIDI Map Settings dialog. Then, press a pad.

Preset 6: Wizoo Darbuka/Latigo

Wizoo's Darbuka and Latigo are VST/AU/RTAS plug-ins so you must access these applications within a host application. Make sure the MIDI input to the host is set to be your Axiom keyboard. Set one of the tracks in the host to output to Darbuka or Latigo. Please consult the documentation for the host to see how this is done. To make the most of the Wizoo preset, the host should be set to transmit on all MIDI channels to Darbuka or Latigo.

Presets 7 to 12: Propellerhead Reason

Each Reason module is specifically covered by these presets, except for Redrum. Redrum is always triggered by the trigger pads no matter which Reason preset is selected. To set up your Axiom keyboard to control the desired Reason module:

- Select the Edit menu (Windows) or Reason menu (Mac), followed by "Preferences."
- Select Advanced MIDI from the Page drop-down menu.
- Select your Axiom keyboard as the Bus A device. Close the Preferences dialog.
- In the MIDI IN device section at the top of the Reason rack, select the desired module in the Channel 1 box.
- In the MIDI IN device section, select Redrum in the Channel 10 box.

You may wish to alter the channel settings of presets 7 to 12 so that you can control two Reason modules at once. In the MIDI IN device section at the top of the Reason rack, simply set the Channel 2 device to a different module from the Channel 1 device , for example. This way there is no need to keep changing the module that Channel 1 is assigned to.

Presets 17 and 20: Ableton Live / Unassigned MIDI controllers

These presets use MIDI controller assignments that are undefined in the General MIDI specification. This means that there is a reduced risk of altering a MIDI control by accident with this preset selected. Many applications do not have their parameters set up with default MIDI controllers. Most of these applications allow you to set up the controllers in the software yourself. You should consult the documentation for your application to see how this is done. For applications that learn the MIDI controllers for their parameters, you should select this preset.

Preset 20 is similar to preset 17, but the encoders are set up to send increment or decrement messages for the MIDI controllers they are assigned. The encoders will send data in relative (binary offset) format when this preset is selected.

Preset 18, 19 and 20: Unassigned MIDI controllers with increment/decrement

These presets use MIDI controller assignments that are undefined in the General MIDI specification. In addition, the encoders are set up to utilize endless dial data formats. Preset 18 provides an inc/dec data format used by Linplug VST instruments such as daOrgan and CronoX. Preset 20 provides an inc/dec method used by Native Instruments in applications including Reaktor and Absynth. Since most of these applications use a MIDI learn feature for assigning controllers to their various parameters, you will need to consult your application's documentation to see how this is achieved. Preset 19 covers another inc/dec method known as "2's compliment."

***Note**: If Group A is active, all the presets will send a program change when recalled. This is in order to set up the Zone information in a sequencer. If you wish to avoid sending a program change when changing presets, simply turn off group A.*

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